

# CURRICULUM VITAE

## SOONKYU CHUNG, Ph.D.

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### A. Education and Training

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2002-2006	<b>Ph.D.</b> in Nutrition. University of North Carolina, Greensboro, USA
1992-1994	<b>M.S.</b> in Agricultural Chemistry, Seoul National University, Seoul, Korea.
1987-1991	<b>B.S.</b> in Agricultural Chemistry, Seoul National University, Seoul, Korea.

### B. Positions and Honors

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#### **1) Positions and Employment**

2020.1-present	Associate Professor, Dept. Nutrition, University of Massachusetts-Amherst
2020.6-present	Adjunct Faculty in the Interdisciplinary Graduate Program in Advanced Convergence Technology and Science at Jeju National University (South Korea)
2020.1-2021.5	Adjunct Associate Professor, Dept. Nutrition and Health Sciences, University of Nebraska-Lincoln (UNL)
2018.8-2019	Associate Professor, Chair of Graduate Committee, Dept. Nutrition and Health Sciences, University of Nebraska-Lincoln (UNL)
2014.1-2018.7	Assistant Professor, Dept. Nutrition and Health Sciences, University of Nebraska-Lincoln (UNL)
2011.1-2013.12	Assistant Professor, Dept. of Food Science and Human Nutrition, University of Florida, Gainesville
2006.6-2010.12	Postdoctoral Research Fellow, Department of Pathology (Lipid Sciences Section), Wake Forest School of Medicine, Winston Salem.
1997-1999	Senior Researcher, Eugene Science Inc. Seoul, Korea
1995-1996	Researcher, National Institute of Agricultural Development and Technology (NIADT), Suwon, Korea.

#### **2) Honors and Awards**

2021	Editorial board, Frontiers in Cardiovascular Medicine
2020	Associate Editor, Journal of Medicinal Food
2019	Editorial board member, Scientific Reports (Nature Research)
2019	Recipient of Korean Nutrition Society (KNS) Award by American Society for Nutrition

- 2019 Associate Editor, Lipids in Health and Disease (BMC, Springer)
- 2018 Nominee, Nelson Graduate Student Advising Award, CASNR, UNL
- 2018 Selected Top reviewers for Current Developments in Nutrition (CDN)
- 2017 Emerging Scholar Research Award, College of Education and Health Sciences (CEHS), UNL
- 2017 Nominee, Junior Faculty for Excellence in Research, INAR, UNL
- 2015 Editorial Board Member, Lipids (Springer)
- 2013 Junior Faculty Award, University of Florida-Gainesville
- 2010 Young Investigator Award, American Heart Association (AHA), San Francisco, CA
- 2008 Young Investigator Award, American Heart Association (AHA) Scientific Session, New Orleans, LA
- 2008 Early Career Investigator Award, Kern Aspen Lipid Conference, Aspen CO
- 2008 Postdoctoral Fellowship, American Heart Association (AHA), Mid-Atlantic Affiliate
- 2006 Pfizer Global Research and Development Scholarship, Keystone Symposia
- 2006 Young Investigator Award, Society for Experimental Biology and Medicine
- 2006 ASNS Procter & Gamble Graduate Student Research Award, Experimental Biology
- 2006 1<sup>st</sup> Place in ASN Nutritional Immunology RIS Graduate Student Abstract Competition, Experimental Biology.
- 2006 1<sup>st</sup> Place of the ASN Energy & Macronutrient Metabolism RIS Graduate Student Abstract Competition, San Diego
- 2006 D. Elizabeth Williams International Scholarship, University of North Carolina-Greensboro
- 2005 ASNS Procter & Gamble Graduate Student Research Award, Experimental Biology
- 2004 Jefferson-Pilot Fellowship, University of North Carolina, Greensboro
- 1992 Seoul National University Alumni Scholarship

### C. Professional Membership

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| 2003-Present | American Society of Nutrition                                   |
| 2006-Present | Society for Experimental Biology and Medicine                   |
| 2006-Present | American Heart Association (AHA)                                |
| 2006-2012    | American Society for Biochemistry and Molecular Biology (ASBMB) |
| 2010-Present | American Diabetes Association (ADA)                             |
| 2010-2013    | American Society for Parenteral and Enteral Nutrition (ASPEN)   |

### D. Research Support

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#### 1) Current Research Support

- 1R21HD094273 (NICHD)  
**Chung S (PI)** 1/21/2019-12/31/2021  
*Epigenetic Regulation of Fetal BAT Development via Maternal N-3 PUFA Intake.*  
*Total amount \$397,371 (Direct cost: \$275,000)*  
 The goal of this project is to determine the role of maternal intake of EPA in fetal development of brown adipose tissue and its metabolic consequences in later life.

## 2) Pending Research Support

- USDA-NIFA (2020-04469) 9/1/2021-8/30/2026  
**Chung S** (PI), Zhenhua Liu (Co-PI), Yong-Cheul Kim (Co-PI)  
Collaborative impact of whole chia seeds on reshaping gut microenvironment toward prevention of obesity  
*Total amount request, \$500,000*  
The goal of application is to evaluate the metabolic benefits of whole chia seed intake via collaborative interaction with gut microbiome and brown fat activation
- National Institute of Cancer (NIC) 9/1/2021-8/30/2023  
Zhenhua Liu (PI), **Chung S** (Co-PI)  
Understanding the role of *Turicibacter* in intestinal tumorigenesis associated with obesity  
*Total amount request, \$275,000*  
The goal of application is to explore the novel role of evaluate *Turicibacter* in regulating the prevalence of obesity and colon cancer.
- National Institute of Cancer (NIC) 9/1/2021-8/30/2026  
So-young Kim (PI), **Chung S** (PI)-multi-PI project  
Role of activin A t adipose tissue wasting in pancreatic cancer  
*Total amount request, \$2,450,000*  
The goal of application is to test an innovative hypothesis that the blockage of activin A prevents cachectic adipose tissue loss in pancreatic cancer patients
- National Institute of Health R01 (NIDDK) 9/1/2021-8/30/2026  
Leo Y (PI), **Chung S** (Co-PI), Duan B (Co-PI)  
Engineered metabolically Active Human Brown Adipose Tissue to Treat Type 2 Diabetes  
*Total amount request, \$2,083,000*  
The goal of application is to engineer the human 3D BAT using human iPSC as a tool to treat type 2 diabetes
- National Institute of Health R01 (NIDDK) 10/1/2021-9/30/2026  
**Chung S** (PI)  
Iron Mobilization in Beige Fat Development,  
*Total amount request, \$1,250,000 (in direct cost)*  
The goal of application is to test an innovative hypothesis that iron availability plays a critical role in white adipose tissue browning and thermogenesis

## 3) Funded and Completed Research Support

- USDA-NIFA (2017-67017- 26781) 6/15/2017-6/14/2020  
**Chung S.** (PI), Ramer-Tait A. (Co-PI)  
*Epigenetic Regulation of Adipose Tissue Expansion and Metainflammation by Red Raspberry Ellagic Acid and its Gut-Produced Metabolite Urolithins*  
*Total Amount: \$469,949*  
The goal of this project is to evaluate the role of red raspberry consumption in attenuating the high fat diet-induced hyperplasia via histone remodeling (**Outstanding and ranked as 3<sup>rd</sup>**)
- Layman New Directional Seed Grant, University of Nebraska Foundation 1/1/2019-12/30/2019  
**Chung S** (PI)  
Targeting iron metabolism to prevent cancer-associated cachexia

*Total Amount: \$10,000*

The goal of application is to identify the fundamental mechanism by which iron metabolism of adipose tissue regulates cachectic of loss of adipose tissue.

- Sunseo Omega 3, Inc.  
**Chung S** (Co-PI), 8/1/2018-7/30/2019  
*Effects of omega 3-enriched butter consumption during pregnancy on fetus BAT development*  
*Total Amount: \$61,500*
  
- Nebraska Collaboration Initiative Seed Grant  
**Chung S** (PI), Kim S (Co-PI, UNMC) 7/1/2018-12/30/2019  
*Understanding cancer cachexia as the transcriptional and metabolic reprogramming of adipose tissue by activin*  
*Total Amount: \$150,000*  
The goal of application is identify the tumor-driven novel regulator that initiate beige fat development and subsequent cachectic fat loss through RNAseq approach.
  
- Nebraska EPSCoR (Food for Health 2017) Seed Grant  
Hamid B (PI, UNMC), **Chung S** (Co-PI) 7/1/2017-6/30/2019  
*Endocytic Regulators EHD1/2 in Adipocyte Hypertrophy and Metabolism*  
*Total Amount: \$150,000*  
The goal of this collaborative project is to determine the novel role of EHD1 and 2 regulating adipocytes hypertrophy and lipid metabolism
  
- Nebraska EPSCoR (Food for Health 2017) Team Strengthening Seed Grant  
Lee J (PI), **Chung S** (Co-PI), Franco R (Co-PI), Powers R (Co-PI) 7/1/2017-6/30/2019  
*Regulation of nutrient sensing and energy metabolism by copper limitation*  
*Total Amount: \$300,000*  
The goal of this collaborative project is to determine the molecular mechanisms underlying the regulation of nutrient sensing and metabolism as a function of cellular copper levels and develop methods for the control of copper to combat metabolic and degenerative diseases.
  
- ARD Strategic Funding (Miscellaneous)  
**Chung S** (PI) 9/1/2018-12/30/2018  
Institute of Agriculture and Natural Resources at University of Nebraska: Ultralow Freezer  
*Total amount, \$4,750*
  
- Research Council Faculty Seed Grant  
**Chung S** (PI) 1/1/2017-1/31/2017  
*Maternal supplementation of EPA on BAT development and childhood obesity*  
*Total Amount: \$10,000*  
The goal of this project is to determine the role of maternal intake of EPA in fetal development of brown adipose tissue and its metabolic consequences in later life.
  
- Science, Engineering and Medicine (SEM) Initiative  
**Chung S** (PI), Yuguo L (Co-PI and Bin, Duan (Co-PI, UNMC) 7/1/2016-6/30/2018  
*Engineered metabolically active brown adipose tissue from human iPSC to treat obesity and type 2 diabetes*  
*Total Amount: \$100,000*

The goal of this collaborative project between UNL and UNMC to develop the transplantable and metabolically active tissue explant by using human induced-pluripotent stem cells as an innovative tool to treat type 2 diabetes (*only two teams awarded*).

- Nebraska EPSCoR (Food for Health 2016) Seed Grant  
**Chung S** (PI), Hamid B (Co-PI, UNMC) 5/1/2016-4/30/2018  
*Targeting CBL-family ubiquitin ligases to reverse diet-induced obesity and insulin resistance*  
*Total Amount: \$150,000*  
The goal of this collaborative project is to determine the role of CBL families in insulin signaling in adipocytes and muscles as potential drug target for type 2 diabetes
- International Scientific Partnership Program  
Okla M (PI), **Chung S** (Co-PI) 5/1/2017-4/30/2018  
*Role of Nlrp3 inflammasome in adaptive thermogenesis*  
*Total Amount: \$20,000*  
This project is an international collaborative work between King Saudi University and UNL to investigate the role of innate immunity in the brown thermogenesis.
- NIH P20 COBRE Project 5 (NIGMS, P20GM104320)  
Zempleni J. (PI), **Chung S**. (Project 5 leader) 9/1/2014-5/30/2017  
*Regulation of White Adipocyte Browning by Dietary Fatty Acids"*  
*Total Amount awarded for project 5: \$450,000*  
The goal of this project is to investigate the differential impact of dietary fatty acids in white adipocyte browning and adaptive thermogenesis
- 13SDG14410043 (AHA Scientist Development Grant)  
**Chung S** (PI) 1/1/2013 -12/31/2016  
*Gamma-tocotrienol: a novel regulator of white adipocyte hyperplasia and inflammation,*  
*Total amount, \$308,000 (Transferred to UNL in 2014. Jan)*  
The goal of this project is to determine the anti-obesity role of gamma tocotrienol by inhibiting hyperplastic new fat cell formation.
- ARD Strategic Funding (Miscellaneous)  
**Chung S** (PI), Pannier A (Co-PI) 5/1/2015-12/30/2015  
Institute of Agriculture and Natural Resources at University of Nebraska: qPCR station  
*Total amount, \$16,300*
- Lallemand Health Solutions  
Henkins B (PI), **Chung S** (Co-PI) 5/1/2013-4/30/2015  
Evaluation of the effect of 3 probiotic strains with bile salt hydrolase activity on fecal and plasma.  
*Total amount: \$250,000*
- Florida Department of Agriculture and Consumer Services  
Maurice M (PI), **Chung S** (Co-PI) 6/1/2014-5/30/2015  
Application of muscadine grape seed oil to prevent obesity  
*Total amount \$17,000*
- Agricultural Research Development Strategic Funding  
**Chung S** (PI)

*Development of cost-effective high-throughput screening method to identify regulators for white adipocyte browning using infrared (IR)-thermal imaging*

Total amount: \$10,000

- NIH Pilot CTSI  
**Chung S** (PI) 1/1/2011-12/30/2011  
Molecular mechanisms of brown-like adipocyte differentiation in human white adipose tissue.  
Total Amount: \$20,000
- USDA-CRIS  
**Chung S** (PI) 5/1/2011-12/30/2011  
*Lipid metabolism for the prevention of obesity and inflammation*  
Total amount \$10,000
- Early Career scientist seed grant (University of Florida)  
**Chung S** (PI) 3/1/2013-12/30/2013  
*Effectiveness of ellagic acid on obesity: novel regulation of obesity by epigenetic modification*  
Total amount \$50,000
- Experiment Station Equipment Matching Grant  
**Chung S** (PI) 5/1/2011-12/30/2011  
Institute of Food and Agricultural Sciences (IFAS) at University of Florida.  
Total amount \$15,000
- American Heart Association Postdoctoral Fellowship  
**Chung S** (PI) 7/1/2008-6/30/2010  
*VLDL metabolism and insulin resistance in liver-specific ABCA1 knockout mice*  
Total amount, \$80,000

## E. Peer-Reviewed Publications

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### Publication and Citation by Google Scholar

#### My NCBI Bibliography

- **IF (Impact Factor), \*Corresponding author**
- 1. Yook J, Thomas SS, Toney AM, Lee J and **Chung\***. 2021. Diet-induced iron deficiency attenuates adaptive thermogenesis via defective iron metabolism of adipose tissue in C57BL/6 mice (*J of Nutr*, under review)
- 2. Yook JS, You M, Kim Y, Zhou M, Liu Z, Kim YC, Lee J and **Chung S\***. 2021. The thermogenic characteristics of adipocytes are dependent on the regulation of iron homeostasis. *J of Biol. Chem.* 296: 100452. DOI: 10.1016/j.jbc.2021.100452.
- 3. Toney AE, Fox D, Chaidez V, Ramer-Tait AE, **Chung S\***. 2021. Immunomodulatory Role of Urolithin A on Metabolic Diseases. *Biomedicines* 2021, 9, 192. DOI: 10.3390/biomedicines 9020192.
- 4. Toney AM, Albusharif M, Works D, Polenz L, Schlange S, Chaidez V, Ramer-Tait AE and **Chung S\***. 2021. Differential Effects of Whole Red Raspberry Polyphenols and Their Gut

- Metabolite Urolithin A on Neuroinflammation in BV-2 Microglia. *Int. J of Environ Res Public health* 18, 68. <https://dx.doi.org/10.3390/ijerph18010068>
5. Li J, Kim S, Yu S, Tang Y, Kim Y, **Chung S**, Zhenhua L. 2020. The genetic ablation of TNF- $\alpha$  attenuates *Wnt*-signaling and adiposity in high fat diet-induced obese mice. *J of Human Nutrition* 4(1): 112-119. DOI: 10.36959/487/290.
  6. Xian Y, Rong F, Jing S, Toney AM, and **Chung S\***, Ramer-Tait AE\*. 2020. Polyphenolic fractions isolated from red raspberry whole fruit, pulp, and seed differentially alter the gut microbiota of mice with diet-induced obesity. *J of Funct Foods*. DOI:10.1016/j.jff.2020.104288
  7. Kim H, Jeon B, Kim IM, Townsend SJ, Lorch CM, Viana MP, Myers JF, Trupp CJ, Whipps ZT, Kundu M, **Chung S**, Sun X, Khalimonchuk O, Lee J, and Ro S. 2020. Sestrin2 Phosphorylation by ULK1 induces autophagic degradation of mitochondria damaged by Cu-ROS. *Int J Mol Sci* 21: E6130. Doi: 10.3390/ijms21176130.
  8. Martin A, **Chung S**, Koehler Karsten. 2020. Is exercise a match for cold exposure? Common molecular framework for adipose tissue browning. *Int J Sports Med*. 41: 427. DOI: 10.1055/a-1100-7118.
  9. You M, Fan R, Kim J, Shin S and **Chung S\***. 2020. Alpha-linolenic acid enriched butter promotes fatty acid remodeling and thermogenic activation in the brown adipose tissue. *Nutrients* 12: 136. DOI: 10.3390/nu12010136
  10. Okla M, Al Madani JO, **Chung S**, Alfayez M. 2020. Apigenin Reverses Interleukin-1 $\beta$ -induced Suppression of Adipocyte Browning via COX2/PGE2 Signaling Pathway in Human Adipocytes. *Mol Nutr Food Res*. 64(1):e1900925. Doi: 10.1002/mnfr.201900925
  11. Fan R, You M, Toney AM, Kim J, Giraud D, Xian Y, Ye F, Ramer-Tait AE, and **Chung S\***. 2019. Red raspberry polyphenols attenuate high fat diet-driven activation of NLRP3 inflammasome and its paracrine suppression of adipogenesis via histone modifications. *Mol Nutr Food Res*. 64(15):e1900995. DOI: 10.1002/mnfr.201900995.
  12. Fan R, Kim J, You M, Giraud D, Toney AM, Shin SH, Kim SY, Brokowski K, Newman J and **Chung S\***. 2020. Alpha-linoleic enriched butter attenuated high fat diet-induced insulin resistance and inflammation by promoting bioconversion of n-3 PUFA synthesis and subsequent oxylipin formation. *J. Nutr Biochem*. 76: 108285
  13. Toney A, Fan R, Xian Y, Chaidez V, Ramer-Tait AE, and **Chung S\***. 2019. Urolithin A, a gut metabolite of ellagic acid, improves insulin sensitivity through augmentation of mitochondrial function and biogenesis. *Obesity*. 27:612-620
  14. Lin H, Du Q, Li Q, Wang O, Wang Z, Liu K, Akert L, Zhang C, **Chung S**, Duan B and Lei Y. 2018. Differentiating human pluripotent stem cells into vascular smooth muscle cells in three dimensional thermoreversible hydrogels. *Biomater Sci*. 18: 347-361
  15. Lin H, Du Q, Li Q, Wang O, Wang Z, Elowsky C, Liu K, Zhang C, **Chung S**, Duan B and Lei Y. 2018. Manufacturing human Pluripotent Stem Cells Derived Endothelial Cells in Scalable and Cell-friendly Microenvironments. *Biomater Sci*. 18: 373-388.
  16. Fan R and **Chung S\***. 2019. Adaptive thermogenesis by n-3 polyunsaturated fatty acids: Emerging evidence and mechanisms. *Biochemi Biophys Acta-Molecular and Cell Biology of Lipids*, 1846: 59-70 (**Invited Review in thematic review: Thermogenic Fat**)
  17. Fan R, Toney AM, Jang Y, Ro S, and **Chung S\*** 2018. Maternal n-3 PUFA supplementation promotes fetal brown adipose tissue development through epigenetic modifications in C57BL/6 mice. *Biochemi Biophys Acta-Molecular and Cell Biology of Lipids*. 1863:1488-1497.
  18. Kim Y, Nartarajan SK, and **Chung S\*** 2018. Gamma-tocotrienol attenuates the hepatic

- inflammation and fibrosis in the mouse models of nonalcoholic fatty liver diseases. *Mol Nutr Food Res*. 62: e1899519.
19. Lin H, Du Q, Li Q, Wang O, Elowsky C, Liu K, Zhang C, **Chung S**, Duan B and Lei Y. 2018. A Scalable and Cost-Effective Bioprocess for Manufacturing Clinical-Grade Human Pluripotent Stem Cells-Derived Endothelial Cells. *Stem cell reports*. 11:454-469.
  20. Kim Y, Qi D, Wu S, Kuss M, **Chung S**, He Y, and Duan B. 2018. Mechanically robust cryogels with injectability and bioprinting supportability for adipose tissue engineering, *Acta Biomater*. 74: 131-142.
  21. Kim Y, Brown JM and **Chung S\*** 2018. Gamma tocotrienol attenuates the production of proinflammatory lipid mediators in NLRP3-inflammasome stimulated macrophages. *J. Nutr Biochem*. 58: 169-177.
  22. Kuss M, Kim J, Qi D, Lei Y, Duan B\* and **Chung S\*\***, 2018. Effects of Tunable, 3D-Bioprinted Hydrogels on Human Brown Adipocyte Behavior and Metabolic Function. *Acta Biomater*. 71:486-495 (**IF:6.32**) #Co-corresponding author
  23. Okla M, Walid Z, Mussad A, **Chung S\*** 2018. Inhibitory effects of Toll-like receptor 4, NLRP3 inflammasome and interleukin 1 $\beta$  on white adipocyte browning. *Inflammation*. 41:626-642
  24. Cuff H, Liu M, Boudyguina E, Weckerle A, Bashore A, Susan F, **Chung S** and Park S. 2018. Adipocyte ABCA1 is a critical regulator of adipose cholesterol content and adipocyte function. *Arterioscler Thromb Vasc Biol*, 38: 733-743
  25. Okla M, Kim J, Koehler K, and **Chung S\*** 2017. Dietary factors promoting brown and beige fat development and thermogenesis. *Adv in Nutr*, 8:473-83. (**IF:6.85**), **Featured as the cover image for 2017 May issue**
  26. Buckner T, Rong F, Kim Y, Lee J, **Chung S\*** 2017. Attenuation of NLRP3 inflammasome activation by delta- and gamma-tocotrienols via inhibition of NF- $\kappa$ B priming and reactive oxygen species generation. *Curr Dev Nutr*. 1:e000760.
  27. Chuang C, Liu M, Kurtz LC, **Chung S**, Boudyguina E, Dinh TA, Bashore A, Zhu X, Sethupathy P, Parks JS 2017. Hepatocyte-specific ABCA1 deletion impairs hepatic insulin signaling and lipogenesis by decreasing intracellular free cholesterol trafficking to the plasma membrane. *Cell reports* 19:2116-29.
  28. Liu M, **Chung S**, Shelness G, Parks S 2017. Hepatic ABCA1 deficiency is associated with delayed apolipoprotein B secretory trafficking and augmented VLDL triglyceride secretion, *BBA - Molecular and Cell Biology of Lipids* 1862:1035-1043.
  29. Kim J, Okla M, Erickson A, Carr T, Nartarajan SK, and **Chung S\*** 2016. EPA potentiates brown thermogenesis through FFAR4-dependent upregulation of miR-30b and miR-378. *J of Biol. Chem*. 291:20551-62.
  30. Kang I, Buckner T, Shay N, Gu L and **Chung S\*** 2016. Improvements in Metabolic Health with Consumption of Ellagic Acid and Subsequent Conversion into Urolithins: Evidence and Mechanisms. *Adv in Nutr*, 7:961-72. **Featured as the cover image for 2016 Sep issue**
  31. **Chung S**, Kim J, Yang SJ, Lee Y, Lee M 2016. Nutrigenomic functions of PPARs in obesogenic environments. *PPAR Res* 2016: 4794576.
  32. Zhao L, Fang X, Marshall MR, **Chung S\*** 2016. Regulation of obesity and metabolic complications by gamma and delta tocotrienols. *Molecules*, 21: 344.
  33. Kang I, Carr T, Espin JC, Tomas-Barberan FA, and **Chung S\*** 2016. Raspberry seed flour attenuates high sucrose diet-mediated hepatic stress and adipose tissue inflammation *J. Nutr Biochem*, 32: 64-72.



34. Kang I, Espin JC, Tomas-Barberan FA, and **Chung S\*** 2016. Urolithin A, C and D, but not iso-Urolithin A and Urolithin B, attenuate triglyceride accumulation in primary cultures of human adipocytes. *Mol Nutr Food Res.*, 60: 1129-38.
35. Kim Y, Wang W, Okla M, Kang I, Regis M and **Chung S\*** 2016. Suppression of NLRP3 inflammasome by gamma-tocotrienol ameliorates type 2 diabetes. *J of Lipid Res.*, 57:66-76
36. **Chung S** and Parks JS. 2016 The role of dietary cholesterol in adipose tissue inflammation. *Curr Opin Lipidol*, 27: 19-25 (**Invited Review**)
37. Okla M, Wang W, Kang I, Pashaj A, Carr T, and **Chung S\*** 2016. Activation of Toll-like Receptor (TLR) 4 Attenuates Adaptive Thermogenesis via Endoplasmic Reticulum Stress. *J Biol. Chem.* 240:26476-490.
38. Zhao L, Yagiz Y, Xu C, Lu J, Marshall M and **Chung S\*** 2015. Muscadine Grape Seed Oil as a Novel Source of Tocotrienols to Reduce Adipogenesis and Adipocyte Inflammation. *Food Funct.* 6:2293-302.
39. Okla M, Ha JH, Temel R, and **Chung S\*** 2015. BMP7 drives human adipogenic stem cells into metabolically active beige adipocytes. *Lipids*, 50:111-20.
40. Zhao L, Kang I, Fang X, Lee M, Hollins RR, Marshall MR, and **Chung S\*** 2015. Gamma-tocotrienol attenuates high fat diet-induced obesity and insulin resistance by inhibiting adipose inflammation and macrophage recruitment. *Int. J Obes (Lond)*. 39: 438-446.
41. Okla M, Kang I, Kim D, Gourineni V, Shay N, Gu L and **Chung S\*** 2014. Ellagic acid modulates lipid accumulation in primary human adipocytes and human hepatoma Huh7 cells via discrete mechanisms *J. Nutr Biochem*, 26: 82-90.
42. **Chung S**, Cuffe H, Marshall SM, McDaniel AL, Temel RE and Parks JS 2014. Dietary cholesterol promotes adipocyte hypertrophy and inflammation in visceral, but not subcutaneous, fat in African green monkeys. *Arterioscler Thromb Vasc Biol*, 34:1880-1887.
43. Kang I, Okla M, and **Chung S\*** 2014. Ellagic acid inhibits adipocyte differentiation through coactivator-associated arginine methyltransferase 1-mediated chromatin modification. *J. Nutr Biochem*, 25: 946-953.
44. Ha JH, Li Q, **Chung S\*** 2014. Ocular Inflammation and Endoplasmic Reticulum Stress Are Attenuated by Supplementation with Grape Polyphenols in Human Retinal Pigmented Epithelium Cells and in C57BL/6 Mice. *J. of Nutr* 144:799-806.
45. Zhao L, Ha JH, Kang I, Okla M, and **Chung S\*** 2014. Gamma-tocotrienol antagonizes early stage adipogenesis in human adipose-derived stem cells. *Mol Nutr Food Res.* 58, 569-579.
46. Zhu X, **Chung S**, Bi X, Chuang CC, Brown AL, Liu M, Cuffe H, Gebre AK, Boudyguina E, Parks JS 2013. Myeloid Cell Specific ABCA1 Deletion Does Not Worsen Insulin Resistance in High Fat Diet Induced or Genetic Obese Mouse Models. *J. Lipid Res.* 54 (10):2708-17.
47. Gourineni V, Shay N, **Chung, S**, Sandhu A, and Gu, L 2012. Muscadine Grape (*Vitis rotundifolia*) and Wine Phytochemicals Prevented Obesity Associated Metabolic Complications in C57BL/6J. *J. Agri. and Food Chem.*, 60: 7674-81.
48. Forrest L, Lough C, **Chung S**, Boudyguina E, Gebre E, Smith T, Colvin P and Parks JS 2013. Echium oil reduces plasma triglycerides by increasing intravascular lipolysis in apoB100-only LDL receptor knockout mice. *Nutrients*.5: 2629-45.
49. Chuang C, Shen W, Xie G, Jia W, **Chung S**, McIntosh MK 2012. Bioavailability, glucose disposal, and anti-inflammatory properties of grape powder in high fat-fed obese mice. *J. Agri. and Food Chem*, 60: 12458-68.
50. Parks JS, **Chung S**, Shelness GS 2012. Hepatic ABC transporters and triglyceride metabolism. *Current Opinion in Lipidology*, 23: 196-200.

51. Lord C, betterers JL, Ivano PT, Milne SB, Madenspacher J, **Chung S**, Liu M, Davos MA, Lee RG, Crooke RM, Graham MJ, Parks JS, Brasaemle DL, Fessler M, Brown AH, and Brown JM. 2012. CGI-58/ABH-derived signaling lipids regulate systemic inflammation and insulin action. *Diabetes*, 61: 355-63.
52. Liu M, **Chung S**, Shelness GS, and Parks JS. 2012, Hepatic ABCA1 and VLDL triglyceride production, *Biochim Biophys Acta*, 1821:770-7.
53. Obsen T, Faergeman NJ, **Chung S**, Martinez K, Govern S, Loreau O, Wabitsch M, Mandrup S, and McIntosh MK 2012. Trans-10, cis-12 conjugated Linoleic Acid Decreases *de novo* Lipid Synthesis in Human Adipocytes. *J. Nutr Biochem*, 23: 589-90.
54. **Chung S**, Gebre AK, and Parks JS 2011. Adipocyte ABCA1 contributes to the HDL biogenesis. *Circulation*, 124: 1663-72 (**The first paper that demonstrated the role of adipocyte ABCA1 in HDL formation**)
55. Jia L, Ma Y, Rong S, Betterers JL, Xie P, **Chung S**, Wang N, Tang W., and Yu L 2010. Niemann-Pick C1-like 1 deletion in mice prevents high fat diet-induced fatty liver by reducing lipogenesis. *J Lipid Res*. 51: 3135-3144.
56. Kennedy, A, Martinez K, **Chung S**, LaPoint K, West T, Hopkins R, Anderson K, Schmidt S, Mandrup S, and McIntosh K 2010. Inflammation and insulin resistance induced by trans-10, cis-12 Conjugated linoleic acid are dependent on intracellular calcium levels in primary cultures of human adipocytes. *J Lipid Res*. 51: 1906-1917.
57. **Chung S**, Timmins JM, Duong M, Degirolamo C, Rong S, Sawyer JK, Singaraja RR, Hayden MR, Maeda N, Rudel LL, Shelness GS and Parks JS 2010. Targeted Deletion of Hepatocyte ABCA1 Leads to Very Low Density Lipoprotein Triglyceride Overproduction and Low Density Lipoprotein Hypercatabolism. *J Biol. Chem*. 285:12197-209.
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## F. Manuscripts in Review or Preparation

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1. Yu SY, Liu Z, **Chung S**, Kim YC. 2021. The genetic ablation of TNF $\alpha$  attenuates hepatic steatosis and insulin resistance by promoting fatty acid metabolism in adipose tissue (Submitted in Metabolism).
2. Yu SY, Liu Z, **Chung S**, Kim YC. 2021. Sulforaphane exerts anti-inflammatory effects on LPS-stimulated RAW 264.7 and mouse bone marrow-derived macrophages by inhibiting p65 phosphorylation and histone acetylation (Submitted in Nutrition Research)
3. Liu B, Li X, Shi X, Zhou Y, Alvarez S, Naldrett MJ, Kachman SD, Ro S, **Chung S**, Yu J. 2021. Therapeutic potential of garlic chive-derived vesicle-like nanoparticles in NLRP3 inflammasome-mediated inflammatory diseases (*ACS Nano*, submitted)
4. Yook JS, Kim J, Okla M, You M, Toney A.M. Fan R, Ozaki G, Kim H, Puniya BL, Helikar T, Vaulont S, Kim Y, Ghosh M, Rouault T, Okla M, Lee J and **Chung S\***. 2021. Coordination of beige adipogenesis with IRP, hepcidin, and HIF2 $\alpha$ -dependent iron mobilization. *PNAS* (In preparation)
5. Xu P, You M, Luan Y, Shukla S, Eldani M, Caffrey T, Grandgenett P, Singh P, Hollingsworth M, Kim SY\* and **Chung S\***. 2021. Activin A signaling mediates loss of adipose tissue in pancreatic ductal adenocarcinoma patients. (In preparation)
6. Yook J, Jaekwon Lee, **Chung S\***. 2021. Iron metabolism in white, beige and brown adipocytes (BBA In preparation).
7. You M, Yook J, Yu SY, **Chung S\***. 2021. High fat diet feeding provokes HIF2 $\alpha$ -mediated polycythemia, iron deregulation, and paradoxical improvement of glucose metabolism in IRP1-deleted mice (*AJP-Endo*, in preparation)
8. Martin A, **Chung S**, Smith B, Koehler K. 2019. Acute mild cold exposure induces a measurable increase in energy expenditure in normal and overweight/obese individuals through non-shivering thermogenesis. In preparation.

## G. Abstracts

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### 1) *Published Abstracts*

1. Lin TC, Tang Y, Kim YC, **Chung S**, Liu Z. 2021. The Influence of High-Fat Diet in Early Life on Intestinal Tumorigenesis in APC1638N Mice. *Nutrition 2021*, American Society of Nutrition (ASN).
2. Tang Y, Lin TC, **Chung S**, Kim YC, Liu Z. 2021. Impact of High-Fat Diet in Early-Life on Mammary Metabolic and Inflammatory Status in Later-Life in Mice. *Nutrition 2021*, American Society of Nutrition (ASN)
3. Yu SY, **Liu Z**, **Chung S**, Kim YC. 2021. Obesity-induced tumor necrosis factor alpha suppresses in vivo and in vitro retinoic acid synthesis and fatty acid oxidation in adipose tissue. *Nutrition 2021*, American Society of Nutrition (ASN)
4. Yook Y, You M, Lee J and **Chung S**. 2021. Regulation of iron homeostasis to support differentiation and thermogenic function of adipocyte. EB2021. American Society for Biochemistry and Molecular Biology (ASBMB)
5. Yook Y, Thomas SS, and **Chung S**. 2021. Diet-induced non-anemic iron deficiency attenuates adaptive thermogenesis via defective iron metabolism of adipose tissue in C57BL/6 mice. *Nutrition 2021*, American Society of Nutrition (ASN)
6. Loss of thermogenic energy expenditure via targeted deletion of transferrin receptor 1 in adipocytes instigates hepatic steatosis and insulin resistance. *Nutrition 2021*, American Society of Nutrition (ASN)
7. Toney AM, Xian Y, Works D, Chaidez V, Chung S and Ramer-Tait AE. The Gut Microbiota Regulates the Metabolic Benefits Mediated by Red Raspberry Polyphenols. *Nutrition 2021*, American Society of Nutrition (ASN)
8. Fox D, Tony AM, You M, and **Chung S**. Deletion of EHD2 attenuated adipocyte hypertrophic expansion and ameliorated diet-induced obesity and insulin resistance. *Nutrition 2020*
9. Tony AM, Xian Y, **Chung S** and Ramer-Tait A. Establishing *Gordonibacter urolithinifaciens* in Complex Gut Ecosystems as a Probiotic to Study Its Role in Mediating the Metabolic Benefits of Dietary Polyphenols *Nutrition 2020*
10. You M and **Chung S**. Iron-response element binding protein 1 (IRP) and 2 are indispensable for white adipose tissue browning, *Nutrition 2020*
11. Sleem I, Tony A, Shi Q, **Chung S**, Schlegel V. Red kidney beans ameliorate the high fat diet-induced hepatic fat accumulation and inflammation, *Nutrition 2020*
12. You M, Yook J, and **Chung S**. Paradoxical increase of insulin sensitivity despite blunted adipose tissue browning in genetic ablation of IRP1. *Nutrition 2019*
13. Toney AM and **Chung S**. Urolithin A, a gut metabolite, induces metabolic reprogramming of adipose tissue by promoting macrophages M2 polarization and mitochondrial function. *Nutrition 2019*
14. Yook, Lee J and **Chung S**. Iron Deficiency Anemia (IDA) promotes visceral obesity due to defective adipose tissue browning. *Nutrition 2019*
15. Kim J, Fan R, You M, **Chung S**. Dietary n-6/n-3 FA ratio, but not total content of n-3 PUFA, regulates diet-induced obesity, insulin resistance, and metabolic dysfunction. *Nutrition 2019*
16. Fan R, Toney AM, You M, Kim M, **Chung S**. Reversal of HF-diet driven NLRP3 inflammasome activation and adipocyte hypertrophic expansion by supplementation with red raspberry polyphenols. *Nutrition 2019*
17. Martin, A, **Chung S**, Smith B, Koehler K, Acute Mild Cold Exposure Induces a Measurable

- Increase in Energy Expenditure in Normal Weight and Overweight/Obese Individuals through Non-Shivering Thermogenesis. *Nutrition 2018*
18. Mulcahy A, Fan R and **Chung S**, Urolithin A, a gut metabolite of ellagic acid, improves hepatic insulin sensitivity in C57BL6 mice against high fat diet, *Nutrition 2018*
  19. Yook J, Kim J, Mulcahy A, Lee J and **Chung S**. Beige fat development is linked with iron-regulatory network between adipocyte iron demand and systemic iron mobilization, *Nutrition 2018*
  20. You M and **Chung S**. Identification of autonomous iron-regulatory network underlying mitochondrial biogenesis and beige fat development, *Nutrition 2018*
  21. Rong F, Mulcahy A, and **Chung S**. Maternal Fish Oil Supplementation Potentiates Fetal Brown Adipose Tissue Development Conferring Augmented Thermogenesis to Offspring, *Nutrition 2018*
  22. Kim Y and **Chung S**. Gamma tocotrienol attenuates hepatic steatosis and ER stress against high-fat and high-sucrose diet, *Nutrition 2018*
  23. Kim Y, Brown M, and **Chung S**. Gamma Tocotrienol Attenuates the Aberrant Lipid Mediator Production in NLRP3-inflammasome Stimulated Macrophages, *Nutrition 2018*
  24. Mulcahy A, Okla M, Chaidez V, **Chung S**. High fat diet-induced inflammation interferes with obligatory iron-mobilization for beige fat development. Keystone Symposia 2018
  25. Yook J, Kim J, Mulcahy A, You M, Fan R, Ozaki G, Puniya B, Helikar T, Okla M, Vaulont S, Rouault T, Lee J and **Chung S**. Beige fat development is regulated by the coordinated iron-regulatory network between adipocyte iron demand and systemic iron mobilization, Keystone Symposia 2018
  26. Kim J, and **Chung S**. Prior exposure of angiogenic factors promote cell-autonomous brown adipogenesis of human classical brown precursor cells. *FASEB J* (EB 2017)
  27. Fan R, Kim J and **Chung S**. EPA promotes differentiation of human brown precursor cells into metabolically active classical brown adipocytes via Gq/11 signaling. *FASEB J* (EB 2017)
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  29. Kim Y and Chung S. CHOP activation is indispensable for fatty acid driven-NLRP3 inflammasome and IL-1 $\beta$  secretion by gamma tocotrienol. *FASEB J* (EB 2017)
  30. Culpepper T, Rowe CC, Nieves C, Girard S, Christman M, **Chung S**, Tompkins T and Langkamp-Henken B. Effect of 3 Probiotic Strains on Bile Acids and Glucose Metabolism in Healthy Adults: a Randomized, Double-Blind Placebo-Controlled Crossover Study. *FASEB J* (EB 2016)
  31. **Chung S**, E Kwak. Glucose-lysine Maillard reaction products fortified with caffeic acid potentiate anti-oxidant and anti-inflammatory properties of caffeic acid in macrophages *FASEB J* (EB 2016)
  32. Kim Y, **Chung S**. Gamma tocotrienol suppresses NLRP3 Inflammasome by dual mechanism of A20-mediated priming inhibition and AMPK/autophagy axis activation. *FASEB J* (EB 2016)
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  34. Okla M, Wang W, **Chung S**. High fat diet-induced obesity suppresses adaptive thermogenesis via Toll-Like Receptor (TLR) 4-mediated Endoplasmic Reticulum Stress. *FASEB J* (EB 2016)

35. Kim J, Okla M, Nartarajan K, **Chung S**. Long chain Fatty Acid Receptor 4 (FFAR4) mediates EPA-miR30b axis activation for promoting brown adipogenesis. *FASEB J* (EB 2016)
36. Kim J and **Chung S**. Long chain Fatty Acid Receptor 4 (FFAR4) mediates EPA-*miR30b* axis activation for promoting brown adipogenesis. Keystone Symposia 2016.
37. Okla M and **Chung S**. Regulation of adaptive thermogenesis via Toll-Like Receptor (TLR) 4-mediated Endoplasmic Reticulum Stress. Keystone Symposia 2016.
38. Kang I, Okla M, Riekhof W and **Chung S**. Ellagic acid attenuates lipid accumulation in yeasts, human hepatoma cells and C57BL/6 mice (2015 Keystone meeting)
39. Kang I, Carr T and **Chung S**. Ellagic acid supplementation attenuates sucrose-induced obesity and metabolic complication. *FASEB J* (EB 2015)
40. Kang I, Tomás-Barberán FA, Espín JC, and **Chung S**. Urolithin C, a gut metabolite of ellagic acid, attenuates triglyceride accumulation in human adipocytes and hepatoma Huh7 Cells. *FASEB J* (EB 2015)
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42. **Chung S** and Wang W. Tocotrienol attenuates insulin resistance through inhibition of Nlrp3-inflammasome activation in diabetic leptin receptor knockout mice. *FASEB J* (EB 2015)
43. Zhao L, Yagiz Y, Xu C, Lu J, Marshall MR, and **Chung S**. Identification and characterization of tocotrienols in muscadine grape seed oil and their inhibitory effects on adipogenesis and inflammation. *FASEB J* (EB 2015)
44. Zhao L, Marshall MR, and **Chung S**. Application of Muscadine Grape Seed oil to prevent obesity. International Food and Technology (IFT) 2015. Chicago, IL.
45. Okla M, Ha JH, Lee M, and **Chung S**. Establishment and Characterization of in Vitro Model of Human Beige Adipocytes Using Adenoviral Delivery of BMP7. *FASEB J* (EB2014).
46. Okla M, Kang I, Lee M and **Chung S**. EA attenuates adipocyte and hepatic triglyceride contents via discrete mechanisms *FASEB J* (EB2014).
47. Zhao L, Kang I, Okla M, Ha JH, Lee M, Marshall MR and **Chung S**. Gamma tocotrienol improves high fat diet-induced obesity and insulin resistance by inhibiting adipose inflammation and macrophage recruitment *FASEB J* (EB2014).
48. Kang I, Okla M, and **Chung S**. Ellagic acid attenuates adipocyte differentiation via histone arginine methylation-associated epigenetic modification *FASEB J* (EB2014).
49. Ha JH, Gu L, Li Q and **Chung S**. Ocular endoplasmic reticulum stress and inflammation is attenuated by supplementation with muscadine grape polyphenols in vitro and in vivo *FASEB J* (EB2014).
50. Chung S and Zhao L. Gamma tocotrienol alleviates high fat diet-induced obesity and insulin resistance by inhibiting adipose tissue inflammation and monocyte M1 polarization. Gordon Lipoprotein Metabolism Conference. 2014.
51. Kang I, Gourineni V, Gu L, Shay N and **Chung S**. Consumption of grape and wine extracts reduce fatty liver in mice fed a high-fat diet by promotion of fatty acid oxidation. American Society of Ecology and Viticulture. (63<sup>rd</sup> National conference, 2012, Portland, Oregon).
52. Okla M, Ou K, Gu L, and **Chung S**. Depolymerized cranberry proanthocyanidins attenuate TNF $\alpha$ -induced inflammation in human adipocytes and induce paraptosis-like cell death in HepG2 hepatoma cells. *FASEB J* (EB2013).

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58. **Chung S**, Sawyer J, Gebre AK, Maeda N, Parks, JS. Adipocyte-specific deletion of ABCA1 decreases HDL and induces adipocyte cholesterol accumulation, *Arteriosclerosis, Thrombosis and Vascular Biology*, 2011, Chicago.
59. **Chung S**, Rong S, Degirolamo C, Brown AW, Bi Xin, Forrest L, Temel R, Shelness G, Maeda N, and Parks JS. Hepatocyte-specific knockout of ABCA1 alleviates liver lipid accumulation, but exacerbates hepatic insulin resistance and inflammation. *Arteriosclerosis, Thrombosis and Vascular Biology*, 2010.
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61. **Chung S** and John S. Parks. Defective Vesicle Trafficking is Associated with TG-enriched VLDL Secretion in Hepatocyte-ABCA1 Knockout mice. *Arteriosclerosis, Thrombosis and Vascular Biology*, 2009, Vol. 29 No7, p138.
62. **Chung S**, Jenelle M. Timmins, MyNgan Duong, Shunxing Rong, Abraham K. Gebre, Ramesh Shah, Janet K. Sawyer, Nobuyo Maeda, Lawrence L. Rudel, Gregory S. Shelness<sup>1</sup> and John S. Parks<sup>1</sup> Targeted Deletion of Hepatocyte ABCA1 Induces Futile Cycling of VLDL Production and Clearance in C57BL/6 mice. *Arteriosclerosis, Thrombosis and Vascular Biology*, 2009, Vol. 29 No7, p143.
63. **Chung S**, Timmins M, Doung M, Seo J, Gebre AK, Boudyguina E, Shah R, Sawyer JK, Rudel LL, Shelness & Parks JS. 2008. Hepatic-specific deletion of ABCA1 promotes PI3 kinase-dependent VLDL maturation: a novel role for ABCA1 in the regulation of VLDL triglyceride assembly. *Arteriosclerosis, Thrombosis and Vascular Biology*, 2008, p330
64. Brown JM, **Chung S**, Alger HM, Sawyer JK, Degirolamo, Nguyen T, Zhu S, Duong M, Wibley AL, Davis MA, Kelly K, Wilson MD, Parks JS, Rudel LL. 2008. Inhibition of stearoyl-CoA Desaturase 1 (SCD1) dissociates insulin resistance and obesity from Atherosclerosis. (*Arteriosclerosis, Thrombosis and Vascular Biology*, 2008, p328)
65. **Chung S**, Timmins JM, Duong M, Seo J, Gebre A, Boudyguina E, Rudel LL, Shelness G, Shah R, Sawyer J, Maeda N, and Parks JS. A Novel Role for Abca1-Generated Large Nascent HDL in the Regulation of VLDL Triglyceride Secretion. *Circulation*, 2008, 118: S558.

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67. Kennedy AK, **Chung S**, Hopkins R, Lapoint K & McIntosh M, 2007. Inflammation and delipidation induced by trans-10, cis-12 CLA is linked to intracellular calcium accumulation in primary cultures of human adipocytes. *FASEB J*.21:A703.
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69. **Chung S**, Zhu X, Parks JS. 2007. Macrophage specific deletion of ABCA1 causes hepatic lipid accumulation and insulin resistance. (Kern Aspen Lipid Conference, August 2007)
70. Mulya A, **Chung S**, Wibley A, Gebre AK, Shelness GS and Parks JS. 2007 Impact of apolipoprotein M (apoM) expression on nascent pre- $\beta$  HDL formation by ATP Binding Cassette Transporter A1 (ABCA1) (Kern Aspen Lipid Conference, August 2007)
71. **Chung S**, Borwn JM, Provo JN, Hopkins R & McIntosh M. 2006. Conjugated linoleic acid (CLA) causes NFkB-induced insulin resistance in human adipocytes. (Keystone Symposia, Adipogenesis/Obesity and Inflammation. January 2006)
72. **Chung S**, LaPoint, A. Kennedy, A. Troy & McIntosh, M. 2006. Proinflammatory cytokine secretion from preadipocytes decreases PPAR $\gamma$  expression and activity in primary cultures of human adipocytes. *FASEB J*. 20: A163.
73. Troy A, Martinez K, **Chung S**, Lapoint K & McIntosh M. 2006. Proinflammatory cytokine gene expression is influenced by the degree of differentiation of primary cultures of human adipocytes. *FASEB J*. 20: A163.
74. **Chung S**, Brown JM, LaPoint K, Boysen SM, Mandrup S, & McIntosh M. 2005. Trans-10, cis-12 conjugated linoleic acid (CLA) causes delipidation and insulin resistance in human adipocytes via NFkB-dependent activation of adipokine gene expression and protein secretion. *FASEB J*. 19: A981.
75. Provo JN, **Chung S**, LaPoint K, & McIntosh M. 2005. Trans-10, cis-12 conjugated linoleic acid (CLA) increases Interleukin-6 (IL-6) secretion from human subcutaneous adipose tissue explants. *FASEB J*. 19: A69.
76. Kennedy A, Fabiyi O, **Chung S**, LaPoint K, & McIntosh M. 2005. PPAR $\gamma$  agonists attenuate trans-10, cis-12 conjugated linoleic acid's (CLA) suppression of adipogenic gene expression in cultures of human adipocytes. *FASEB J*. 19: A69.
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78. Brown JM, Boysen MS, **Chung S**, Fabiyi O, Mandrup S, & McIntosh M. 2004. Trans-10, cis-12 conjugated linoleic acid (CLA) induces human adipocyte de-differentiation: the obligatory role of Gi/o protein-coupled MEK/ERK signaling. *FASEB J*. 18: A878.
79. Brown JM, Boysen MS, **Chung S**, Fabiyi, O, Mandrup S, & McIntosh M. Trans-10, cis-12 conjugated linoleic acid (CLA) alters mechanism, gene expression, and MEK/ERK signaling in mature human adipocytes. (Keystone Symposia X1/X2 Diabetes/Obesity. March 2004)



**2) Oral Abstract Presentations**

1. 2020
2. 2019
3. 2018 Nutrition 2018. Beige fat development is linked with iron-regulatory network between adipocyte iron demand and systemic iron mobilization (By Student, Jinseon Yook J)
4. 2018 Nutrition 2018. Identification of autonomous iron-regulatory network underlying mitochondrial biogenesis and beige fat development (By Student, Mi-kyung You)
5. 2018 Nutrition 2018, Gamma Tocotrienol Attenuates the Aberrant Lipid Mediator Production in NLRP3-inflammasome Stimulated Macrophages (By Student, Yongeun Kim)
6. 2017 Experimental Biology, Mini symposium, Chicago, IL, EPA promotes differentiation of human brown precursor cells into metabolically active classical brown adipocytes via Gq/11 signaling (By Student, Rong Fan)
7. 2016 Experimental Biology, Mini symposium, San Diego, CA, Gamma tocotrienol suppresses NLRP3 Inflammasome by dual mechanism of A20-mediated priming inhibition and AMPK/autophagy axis activation (By student, Yongeun Kim)
8. 2015 Experimental Biology, Mini symposium, Boston, MA, "Identification and Characterization of Tocotrienols in Muscadine Grape Seed Oil and their Inhibitory Effects on Adipogenesis and Inflammation" (By student, Zhao Lu)
9. 2015 Experimental Biology, Mini symposium, Boston, MA, "Tocotrienol Attenuates Insulin Resistance through Inhibition of Nlrp3-Inflammasome Activation in Diabetic Leptin Receptor Knockout Mice"
10. 2015 Experimental Biology, Mini symposium, Boston, MA, "Inflammation Attenuates Adaptive Thermogenesis via Autophagy and ER Stress-Associated Mechanism" (By student, Okla Meshail)
11. 2015 Experimental Biology, Mini symposium, Boston, MA, "Urolithin C, a gut Metabolite of Ellagic Acid, Attenuates Triglyceride Accumulation in Human Adipocytes and Hepatoma Huh7 Cells" (By student, Inhae Kang)
12. 2015 Experimental Biology, Mini symposium, Boston, MA, "Ellagic acid supplementation attenuates sucrose-induced obesity and metabolic complication in C57BL/6 mice" (By student, Inhae Kang)
13. 2014 Experimental Biology, Mini symposium, San Diego, CA, "Ellagic acid attenuates adipocyte differentiation via histone arginine methylation-associated epigenetic modification" (By student, Inhae Kang)
14. 2014 Experimental Biology, Mini symposium, San Diego, CA. "Gamma tocotrienol improves high fat diet-induced obesity and insulin resistance by inhibiting adipose inflammation and macrophage recruitment" (By student, Zhao Lu)
15. 2014 Experimental Biology, Mini symposium, San Diego, CA, "EA attenuates adipocyte and hepatic triglyceride contents via discrete mechanisms" (By students, Okla Meshail).
16. 2013 Experimental Biology, Plenary Session, "Ellagic acid inhibits hyperplastic conversion of human adipose-derived stem cells through histone deacetylase-dependent mechanisms" (By students, Inhae Kang).
17. 2013 Experimental Biology, Plenary Session, Boston, MA, "Gamma-tocotrienol antagonizes adipogenesis through activation of AMPK/autophagy axis in primary human adipocytes" (By students, Zhao Lu).

18. 2010 American Heart Association (AHA) Scientific Session, San Francisco, CA, "Hepatocyte-specific knockout of ABCA1 alleviates liver lipid accumulation, but exacerbates hepatic insulin resistance and inflammation"
19. 2006 Experimental Biology, Plenary Session, San Francisco, CA. "Proinflammatory cytokine secretion from preadipocytes decreases PPAR $\gamma$  expression and activity in primary cultures of human adipocytes"
20. 2005 Experimental Biology, Plenary Session, San Diego, CA. "Trans-10, cis-12 conjugated linoleic acid (CLA) causes delipidation and insulin resistance in human adipocytes via NF $\kappa$ B-dependent activation of adipokine gene expression and protein secretion"

## H. Invited Conferences and Seminars

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### 1) Invited Speaker, International Conferences

1. 2020 European Society of Cardiology. ESC 2020 Preventive Cardiology. Dietary regulation for beige fat activation as a tool to prevent obesity.
2. 2019 International Symposium of the Korean Society for Food Science and Nutrition. Jeju, Korea. Nutritional evaluation of alpha-linolenic acid biofortified butter.
3. 2017 Gordon Research Conference (GRC), Lipids, Molecular & Cellular Biology, Waterville Valley, NH (Chaired by David Bernlohr). Epigenetic regulation of EPA on brown and beige fat development and maintenance (**One of the most prestigious scientific conference in the area of Lipid Research**).
4. 2017 The 10<sup>th</sup> International Conference and Exhibition for Nutraceuticals & Functional Foods, Gunsan Korea.
5. 2016 Northern Great Plains Lipid Conference: An International Conference Coalescing the Lipid Scientists in the Northern Great Plains. Grand Forks, ND, Brown adipogenesis and EPA.
6. 2016 The International Congress on Obesity and Metabolic Syndrome (ICOMES), Seoul, Korea, Regulation of obesity and brown/beige adipose tissue by dietary fatty acids.
7. 2015 The 3<sup>rd</sup> International conference on Palm Phytonutrients and Chronic Diseases. San Francisco CA, 2015. Regulation of obesity and inflammation by gamma tocotrienol.
8. 2013 Keystone Symposia on Molecular Cellular Biology (Adipose Tissue Biology), Keystone, Aspen, CO. Dietary Cholesterol Promotes Adipocyte Hypertrophy and Inflammation in Visceral Fat, but Not Subcutaneous, in Non-Human Primates.
9. 2011 American Heart Association (AHA) Scientific Session, Plenary Session, Chicago, IL, Adipose tissue ABCA1 contributes to HDL biogenesis *in vivo*.
10. 2010, Gordon Research Conference (GRC), Lipoprotein metabolism, Session on HDL and ABCA Transporters (Chaired by Ira Tabas, Robert Ryan), Waterville Valley, NH, Adipocyte Specific Deletion of ABCA1 Decreases HDL-C, but Induces Adipocyte Cholesterol Accumulation.
11. 2008 American Heart Association (AHA) Scientific Session, Plenary Session, New Orleans, LA, A Novel Role for ABCA1-Generated Large Nascent HDL in the Regulation of VLDL Triglyceride Secretion.

### 2) Invited Speaker, Domestic Conferences

1. 2018, 2<sup>nd</sup> Big Ten Academic Alliance-Lipids Conference at Purdue. "Interplay between adaptive thermogenesis and iron metabolism", Lafayette, IN
2. 2017 Experimental Biology, International forum of Korean Society of Nutrition (KSN). "Epigenetic regulation of fetal brown fat development via maternal fish oil intake". Chicago, IL.
3. 2016 UKC (US-Korea Conference on Science, Technology and Entrepreneurship), Food, Agriculture and Nutrition Symposium, Role of dietary fatty acid in brown fat development. Dallas, TX.
4. 2013 The 80<sup>th</sup> Annual Meeting of Korean Society of Food Science and Technology on "Innovations in Food Science for Human Well-Being" as a key Expert, Epigenetic regulation of adipocyte development by dietary polyphenol ellagic acid, Cheonan, Korea
5. 2012 Symposium on palm oil technology. "Regulation of obesity by Palm Tocotrienols". Gainesville, FL.
6. 2011 Southeast Lipid Research Conference (SELRC), Callaway Garden. Establishment of Primary Brown Adipocyte Cultures from the Human Adipogenic Stem cells, Pine Mountain, GA.

### **3) Invited Seminars**

1. 2021 Online Seminar-Interdisciplinary Graduate Program in Advanced Convergence Technology & Science. Jeju University (south Korea). Dietary strategies to obesity and its pathogenic complications.
2. 2020 Food Science Seminar at the University of Massachusetts at Amherst. Regulation of brown fat by iron availability.
3. 2020 Molecular & Cellular Biology Graduate Seminar. University of Massachusetts at Amherst. Regulation of brown fat activation by dietary factors.
4. 2020 Veterinary and Animal Sciences Seminar. University of Massachusetts at Amherst. Nutritional Regulation of Brown and Beige Fat Activation
5. 2019 Nutrition Seminar. University of Massachusetts at Amherst. Regulation of adipose iron metabolism and energy expenditure.
6. 2018 VA Medical Center Seminar. University of Nebraska Medical Center. Departments of Obstetrics and Gynecology and Biochemistry and Molecular Biology. Epigenetic modulation of fetal BAT development by maternal n-3 PUFA intake.
7. 2018 Biochemistry Seminar, University of Nebraska, Metabolic consequence of obesity and inflammation.
8. 2016. Food Science and Technology Seminar. University of Nebraska. Regulation of obesity and metabolic dysfunction by raspberry ellagic acid and its gut microbe-derived metabolites, urolithins.
9. 2016 Obesity Center on Seoul Women's University, at Seoul Korea, Regulation of NLRP3 inflammasome by an unsaturated vitamin E, gamma tocotrienol.
10. 2016. Animal Science Graduate Seminar, University of Nebraska. NLRP3 inflammasome by vitamin E tocotrienol.

11. 2015. Nutritional Sciences Graduate Seminar, University of Connecticut, White adipocyte browning by dietary fatty acids.
12. 2015. Biochemistry Seminar, University of Nebraska. Inverse regulation of innate immunity and thermogenic activation.
13. 2014. VA Medical Center Seminar, University of Nebraska Medical Center. Departments of Obstetrics and Gynecology and Biochemistry and Molecular Biology. Obesity, Inflammation and WAT browning.
14. 2014. Food Science and Technology Seminar, University of Nebraska. Anti-inflammatory roles of Muscadine Grape Polyphenols in retinal diseases.
15. 2014. Nebraska Gateway to Nutrigenomics (NGN) at University of Nebraska. White Adipocyte Browning, a New Hope for Managing Obesity?
16. 2013. Program in Applied Life Chemistry at Seoul National University at Seoul Korea, Epigenetic modulation of obesity by dietary polyphenols.
17. 2013. Obesity Center on Sungshin Women's University, at Seoul Korea, Nutritional Application of Human Brown adipogenesis.
18. 2013. Food Science and Biotechnology Seminar, Kyug Hee University College of Life Sciences. Yongin Korea, Dietary bioactive compounds & obesity and metabolic syndrome.
19. 2011. Animal Molecular and Cellular Biology Graduate Program Seminar, University of Florida, Department of Animal Sciences, Brown adipogenesis: a new therapeutic target to treat obesity.
20. 2010. Food Science and Human Nutrition Seminar, University of Florida. Role of hepatic and adipocyte ABCA1 in regulating cholesterol metabolism.
21. 2010. Molecular Pathology Seminar, Wake Forest University Health Sciences, Department of Pathology/Section on Lipid Sciences, 2010. Adipocyte ABCA1: a hidden player for HDL biogenesis.

## I. Teaching and Mentoring

### 1) Teaching at the University of Massachusetts Amherst

Course	Title (Credits)	Term	Enrollment	Course Evaluation	Instructor Evaluation
NUTR 230	Basic Nutrition (3)	Fall 2020	54		

### 2) Teaching at the University of Nebraska-Lincoln

Course	Title (Credits)	Term	Enrollment	Course Evaluation	Instructor Evaluation
NUTR 926	Carbohydrate and lipid metabolism (3)	Spring 2019	8	4.63/5.0	4.72/5.0
		Spring 2018	10	4.84/5.0	4.90/5.0
		Spring 2017	14	4.64/5.0	4.71/5.0
		Spring 2016	7	4.91/5.0	4.95/5.0
NUTR 455*	Advanced Nutrition (3)	Fall 2018	45	4.70/5.0	4.80/5.0
		Summer 2018	11	4.70/5.0	4.84/5.0
		Fall 2017	76	4.28/5.0	4.18/5.0
		Summer 2017	19	4.46/5.0	4.68/5.0
		Fall 2016	87	4.04/5.0	4.03/5.0
		Fall 2015	54	4.11/5.0	4.04/5.0
		Fall 2014	86	3.63/5.0	3.29/5.0
ASC/ NUTR 921	Interdepartmental Nutrition Program Seminar (1)	Fall 2016	5	n/a	

\* Undergraduate course

### 3) Teaching at the University of Florida-Gainesville

Course	Title (Credits)	Term	Enrollment	Evaluation
HUN 6301	Nutritional Aspect of Lipid Metabolism (3)	Fall 2013	8	4.5/5.0
		Fall 2012	12	4.7/5.0
		Fall 2011	15	4.6/5.0
HUN 6305	Nutritional Aspect of Carbohydrate Metabolism (3)	Spring 2012	13	4.3/5.0

**3) Mentoring Graduate Students, Primary**

<b>Name</b>	<b>Degree</b>	<b>Date Completed</b>	<b>Thesis/Dissertation Title</b>
Lanxin Xu	Ph.D.	<i>In progress</i> (2020- 2024)	Impact of Chia Seed on gut microbiome and brown fat activation
Jin-Seon Yook	Ph.D.	<i>In progress</i> (2017- 2021)	Interplay between adaptive thermogenesis and iron metabolism
Ashely Mulcahy (Co-adviser)	Ph.D.	May 2021 (2016-2021)	Metabolic benefits of UroA, a gut metabolite derived from ellagic acid
Yongeun Kim	Ph.D.	August 2018 (2015-2018)	Mechanism by which gamma tocotrienol suppresses NLRP3 inflammasome and NAFLD
Rong Fan	M.S.	December 2018 (2016-2018)	Maternal nutrition of n-3 PUFA on fetal development of brown fat
Teresa Buckner	M.S.	August, 2016 (2014-2016)	Delta tocotrienol attenuates NLRP3 inflammasome activation via inhibition of NF- $\kappa$ B and reactive oxygen species generation
Meshail Okla	Ph.D.	May, 2016 (2011-2016)	The stimulus effects of BMP7 and the inhibitory effects of TLR4 on adaptive thermogenesis
Inhae Kang	Ph.D.	Dec, 2015 (2011-2015)	Mechanisms by which dietary ellagic acid attenuates obesity and obesity-mediated metabolic complications
Lu Zhao	Ph.D.	May, 2015 (2011-2015)	Attenuation of obesity by tocotrienol and application of grape seed oil as its food-based delivery system

**4) Mentoring Graduate Students, Secondary**

<b>Name</b>	<b>Area of Study</b>	<b>Date Completed</b>	<b>Thesis/Dissertation Title</b>
Akannasha Rampal	MCB Graduate Program	<i>Comp committee</i>	
Gakaxie Story	Food Science Ph.D.	<i>Comp committee</i>	
Ana Clara Sampaio Viana	Veterinary Science Ph.D.	<i>Comp committee</i>	Liver regeneration
Seokyoung Yu	Nutrition Ph.D.	<i>Dec, 2020</i>	Potential bioactives and inflammatory mediators regulating adipose tissue function in obesity
Prakash Sahoo	Nutrition Ph.D.	<i>In progress</i>	Mechanism of 3-hydroxy fatty acids Induced Placental Trophoblast Lipotoxicity
Yizhu Lu	Nutrition M.S.	<i>May, 2019</i>	Role of Ginger-derived exosomes on NLRP3 inflammasome activation
Philma-Glora Muthuraj	Nutrition Ph.D.	<i>In progress</i>	Protective role of palmitoleate against Zika virus-induced apoptosis
Ibtisam A. M. Sleem	Food Science and Technology Ph.D.	<i>In progress</i>	Ability of Red Kidney Beans Grown in Colorado and Nebraska to Remediate Macrophage Mediated Chronic Inflammation and Energy Modulation caused by a High Fat Diet
Junsi Yang	Food Science and Technology Ph.D.	<i>In progress</i>	Fish oil loading onto hollow solid lipid micro- and nanoparticles, digestibility and bioavailability using an <i>in-vitro</i> digestion model
Keting Li	Food Science and Technology Ph.D.	<i>Dec, 2020</i>	<i>C. Albicans</i> hyphae remediation by reprogramming carbohydrate metabolism via synergistic phenols
Ana Gabriela A Lozano	Nutrition M.S	<i>Dec, 2018</i>	Depletion of dietary microRNA from cow's milk causes an increase in purine metabolites in human body fluids and mouse livers
Rituraj Khound	Nutrition M.S	<i>Dec, 2017</i>	Effects of fenugreek feed and vagotomy on hyperlipidemia and insulin resistance

Alexandra Martin	Nutrition & Exercise M.S	Dec, 2016	Adaptive thermogenesis and metabolic changes following diet-and-exercise-induced weight loss
Mohammed A Alrugaibah	Food Science and Technology M.S.	May, 2016	Characterization of extraction methods to recover phenolic-rich extracts from Pinto Beans ( <i>BaJa</i> ) that inhibit alpha-amylase and alpha-glucosidase using response surface approaches
Mazen O Alharbi	Food Science, M.S.	August, 2016	Characterization of extraction methods to recover phenolic-rich extracts from Black Beans ( <i>Phaseolus Vulgaris</i> ) that inhibit alpha-amylase and alpha-glucosidase using response surface approaches
Helen Cuff	Pathology Ph.D.	May, 2015	The Cholesterol Transporter ABCA1 and Cholesterol Accumulation are Key Regulators of Adipose Function in Obesity
Daniel Teixeira	Nutrition Ph.D.	Dec, 2014	Strategies for isolation of DNA prone to biotin deficiency recombination, mitochondria-protein interaction detection and an anti-obesity screening targeting acetyl-coA carboxylase 2.
Bo Shao	Food Science M.S.	May, 2013	Identification of phytochemicals in muscadine pomace and their anti-inflammation activities on RAW 264.7 mouse macrophages
Samuel Spaiser	Nutrition M.S.	Dec, 2013	The Effect of probiotics ( <i>Bifidobacterium</i> G9-1, <i>Bifidobacterium Longum</i> MM2 and <i>Lactobacillus Gasseri</i> KS-13) on digestive and immune health in healthy older adults, double blind, placebo-controlled, crossover study
Supak Jenkitkasemwong	Nutrition Ph.D.	May, 2013	The metal-ion transporter SIP14: Roles in iron metabolism and structure-function analysis

## 5) Other Research Supervision

### A. At UMASS

- Haley Liebman (2020-current), Undergraduate student (Independent Study)  
Project: Elucidating the paracrine interaction between pancreatic tumor cells and adipocytes
- Natasha Greeve (2020-current), Undergraduate student (Independent Study).  
Project: Investigation of anti-inflammatory function of chia seed oil in RAW macrophages  
Independent Study-2 credits



- Joseph Ciurleo (2020.1-2020.6), Undergraduate student. Training for biochemical analysis for nutritional research.

## **B. At UNL**

- Darius Fox (2019-2020), *U-CARE student*, Project: Role of exercise on beige fat development
- Stacie Bartels (2018-2019), Undergraduate Student, Project: Role of red raspberry consumption on gut microbiota change.
- Luke Polenz (2018-2019) Project: Role of gut metabolite urolithin A on NLRP3 inflammasome activation in microglial cells.
- Judy Kim (2018-2019), Project: Evaluation of dairy source of n-3 PUFA in plasma and tissue n-3/n-6 ratio in vivo. Finalist for ASN's Emerging Leaders in Nutrition Science Poster Competition, ASN, 2019
- Mi Zhou (2017-2018) *U-CARE student*, Project: Regulation of n-3 PUFA on Progesterone to Modulate Pregnancy-Mediated Loss of Brown Thermogenesis : 2018 INAR ARD Undergraduate Student Research Program (\$2,500) Iron metabolism in the white and brown adipocytes.
- Grant Ozaki (2016-2017) Undergraduate Student, Project: Iron status and human brown fat development and mitochondria biogenesis
- Jiyoung Kim, Ph.D. (2014-2017) Postdoc fellow, Project: Role dietary n-3 PUFA in regulating brown adipogenesis
- Megan Engel (9/2015 Sep-12/2015) Undergraduate Student, Project: Role of delta tocotrienol on inflammasome activation
- Wei Wang, Ph.D (2014-2015) Postdoc fellow, Project: Inactivation of NLRP3 inflammation by gamma tocotrienol
- Vishnupriya Gourineni, Ph.D.(3/2011-6/2013) Postdoc fellow, Project: Muscadine grape polyphenols in regulating obesity and inflammation
- Dami Kim (2012-2013) Visiting Student from Chungnam University, Korea, Project: Inhibition of adipogenesis by dietary ellagic acid in primary human adipocytes
- Jung-Hyun Ha (2011-2013), Ph.D. Student, Project: Regulation of ocular inflammation by muscadine grape polyphenols
- Min Hyun Kim (2012-2013), Ph.D Student, Project: Use of mouse bone marrow progenitor cells to differentiate into macrophages and adipocytes
- Tuong-Vi Li (2011-2012), Undergraduate Student, Culturing adenovirus expressing human BMP7 gene.

## **6) Achievements by Students and Trainees**

1. Jinseon Yook, Ph.D. student (2017.5-2021. 8)
  - Current position: 4<sup>st</sup> year Ph.D. Student in Chung's lab at UMASS
  - Selected as Graduate Student Abstract Competition Winner, by ASBMB (American Society of Biochemistry and Molecular Biology)
  - Selected as one of finalists Research Day, 2020 (SPHHS/UMASS)
  - Recipient of Virginia Beal Graduate Scholarship (2020, UMASS)
  - Keystone Symposia Scholarship Award (\$1,200), National Institute of Diabetes, Digestive, and Kidney Diseases (NIDDK) Scholarship Recipients, 2017 January

- Finalist for Clinical Emerging Leaders Award by ASN, 2019 (only five finalists)
  - Finalist and 1<sup>st</sup> place for ASN's Emerging Leaders in Nutrition Science Poster Competition (Obesity Session), ASN 2019
  - Finalist of Research day on SPHHS at UMASS.
2. Ashley Toney, Ph.D student (2016.8-2021.5)
    - 1<sup>st</sup> place winner of Young minority Oral research Competition (\$600 Award), Nutrition 2018 by ASN, (Boston MA)
    - **USDA Predoctoral Fellowship** (2019.1-2020.12), Gut-derived metabolites of red raspberry polyphenols and metabolic health, \$100,750.
    - 2019 Graduate Student Luminary Award (\$,1000)
  3. Mikyoung You, Ph.D. (2017.8-2020.10)
    - Selected as one of three finalists in Emerging Leaders in Nutrition Science (Nutrient-Gene Interactions Topical Area), Nutrition 2020 (ePoster presentation)
    - Postdoctoral Travel Grant Award by INAR at University of Nebraska at Lincoln (\$750), 2019
    - Selected as Emerging Leaders in Nutrition Science Poster Competition Nutrition 2018 and 2019
  4. Rong Fan M.S. (2016.8-2018.12)
    - Top two winner of Spring 2018 Research Fair poster competition (U. of Nebraska)
    - Finalist for ASN's Emerging Leaders in Nutrition Science Poster Competition, Obesity RIS 2018 (Boston, MA)
    - Inaugural Robert and Leslie Lewinter-Suskind Pediatric Nutrition Student Travel Award, 2018
    - Finalist and top three winner of Travel Award Nutrition 2018 by ASN
  5. Yongeun Kim Ph.D. (2014.8-2018.8)
    - Current position: Postdoctoral fellow at the Cornell University
    - David H. & Annie E. Larrick Student Travel Award
    - Top two winner of Spring 2018 Research Fair poster competition (U. of Nebraska)
    - Finalist for ASN's Emerging Leaders in Nutrition Science Poster Competition, Dietary Bioactive Components RIS, Nutrition 2018 (Boston, MA)
    - Finalist for ASN's Emerging Leaders in Nutrition Science Poster Competition, Dietary Bioactive Components RIS, Experimental Biology 2016 (San Diego, CA)
  6. Teresa Buckner, M.S. R.D. (2014.8-2016. 8)
    - Current position: WIC Registered Dietitian (Tri-Cities Community Health, Pasco, WA)
    - Finalist for ASN's Emerging Leaders in Nutrition Science Poster Competition, Dietary Bioactive Components RIS, Experimental Biology 2016 (San Diego, CA)
  7. Jiyoung Kim, Ph.D. (2014.11-2017.7 Postdoc)
    - Current position: Assistant professor at Kyungnam college of Information and Technology in South Korea
    - Postdoctoral fellow at Chung's Lab at UNL
    - Keystone Symposia scholarship award (\$1,200), Obesity and Adipose Tissue Biology Feb 2016, Fairmont Banff Springs in Banff, Alberta
  8. Meshail Okla, Ph.D. (2011.8-2016.5)

- Current position: Assistant professor at King Saudi University
- 1<sup>st</sup> place in Energy macronutrient metabolism RIS abstract competition, ASN, Experimental Biology 2014 (San Diego, CA)
- 1<sup>st</sup> place in Graduate student poster competition, Obesity RIS of American Society of Nutrition, Experimental Biology 2014, San Diego.
- Finalist for ASN's Emerging Leaders in Nutrition Science Poster Competition (Nutrient and gene interaction RIS), Experimental Biology 2015, Boston
- 2<sup>nd</sup> place in Research abstract competition in 2016 NPOD (UNL)

9. Inhae Kang, Ph.D. (2012.1-2015.12)

- Current position: Assistant professor (tenure track) at Jeju National University in Korea
- Awardee for Phenolic Research at the Experimental Biology 2013, 2014
- Awardee (1<sup>st</sup> place) in Graduate student poster competition, Obesity RIS of American Society of Nutrition 2013 Experimental Biology 2013, Boston.
- Graduate student poster competition (2<sup>st</sup> place), Obesity RIS of American Society of Nutrition Experimental Biology 2014, San Diego.
- Winner of Spring 2015 Research Fair poster competition (U. of Nebraska)
- Finalist for ASN's Emerging Leaders in Nutrition Science Poster Competition & 3<sup>rd</sup> place (Dietary Bioactive Components RIS), Experimental Biology 2015, Boston.

10. Lu Zhao, Ph.D. (2011.8-2015.5)

- Current position: Senior Researcher at Charles River Laboratories.
- 2<sup>st</sup> place in Graduate student poster competition, Dietary Bioactive Compound RIS of American Society of Nutrition, Experimental Biology 2014, San Diego
- 2<sup>st</sup> place in Graduate student poster completion, International Food Technology 2014
- Finalist for ASN's Emerging Leaders in Nutrition Science Poster Competition (Dietary Bioactive Components RIS), Experimental Biology 2015 (Boston, MA)

## J. Service Activities

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### 1) Service to Professional Society

1. Editorial Advisory Board

- 2018-present, Scientific Report
- 2015-present, Lipids (Publisher: Springer Nature)
- 2019-present, Associate editor, Lipids in Health and Disease (Publisher: BMC)
- 2020-present, Journal of Medicinal Food
- 2021-present, Frontiers Cardiovascular Medicine

2. External Reviewer

: Reviewed nearly 20-50 manuscripts per year since 2011

- Physiology and Metabolism: Journal of Biological Chemistry, Scientific Reports, Molecules, BBA - Molecular and Cell Biology of Lipids, Toxicology Research Lipids, Biofactors, Journal of obesity, PlosOne, Endocrinology, Molecular Metabolism, Molecular and Cellular Endocrinology, British Journal of Pharmacology, Diabetes obesity and Metabolism, Pharmacological Research, eBioMedicine

- Nutritional Biochemistry Area: Molecular Nutrition and Food Research, Journal of Nutrition, Journal of Nutritional Biochemistry, Current Developments of Nutrition, Nutrition Research, Nutrition & Metabolism, Nutrients
- Functional Food Area: Food Chemistry, Journal of Functional Foods, Journal of Agricultural and Food Chemistry, Journal of Food Biochemistry, Journal of Medicinal Food

### 3. Grant Review

- 2020 Reviewer American Heart Association Career Development Grant (Organ Basic Sciences)
- 2019 Reviewer American Heart Association Career Development Grant (Lipoprotein Metabolism)
- 2018 Invited Review Panel, National Science Center, Poland
- 2018 Reviewer American Heart Association Career Development Grant (Organ Basic Sciences)
- 2017 Invited Review Panel, European Research Council (ERC)
- 2017 Invited Reviewer, National Science Center, Poland
- 2015 Early Career Grant Review Panel, National Institute of Health/CSR CADO (Cellular Aspects of Diabetes and Obesity)
- 2015 Reviewer American Heart Association Scientist Development Grant (Lipids Basic Science 3)
- 2015 Massachusetts Agricultural Experiment Station Grant
- 2012 NIFA-USDA

### 4. Service for American Society of Nutrition (ASN)

- 2019 Abstract reviewer for NUTRITION 2019
- 2018 Abstract reviewer for NUTRITION 2018  
Judge for poster competition of NUTRITION 2018
- 2011-present: Abstract Reviewer of ASN Research Interest Sections  
Nutrient and gene interaction, Obesity, Dietary bioactive compounds
- 2011-present: Judge for Poster Competition of ASN RIS Experimental Biology

## **2) University and Community Service**

- Serve as International Advisory Committee (CEHS) 2018-2019
- Graduate Executive Committee of College of Education & Health Sciences (CEHS) 2016-2019
- Research Committee of College of Education & Health Sciences (CEHS) in UNL, 2018-2019
- Research Committee of College of Education & Health Sciences (CEHS) in UNL, 2015
- Search Committee, Core director of UNL Nebraska Center for the Prevention of Obesity Diseases (NPOD), 2017, 2016
- Search Committee, IACUC Clinical Veterinarian, 2015
- Search Committee, Biomarkers of metabolic diseases (Biochemistry), 2016
- Graduation Commencement Faculty Marshal, 2011-2013 (at UF)

- Alachua County Regional Science Fair Judge, 2013 (at UF)
- Lecture at Kanapaha Middle School Science Class, “Nutrition, Obesity and Sugar”, 2012 (at UF)

### **3) Department Service**

#### **A. UMASS**

- 2020- Graduate program committee in Nutrition (GPC)
- 2020- Departmental Personnel Committee member (DPC)
- 2020- Departmental representative of SPHHS curriculum committee
- 2020- Departmental Safety Coordinator
- 2020- Departmental Mentoring Committee

#### **B. UNL**

- 2018-2019 Chair of Graduate Committee (NHS) at UNL
- 2015-2018.9 Graduate Review Faculty UNL, Nutrition and Health Sciences (NHS)
- 2015-2018 Executive Committee of Interdisciplinary Nutrition Graduate Program (INP)
- 2015-present Search Committee Chair, Sport Nutrition position (2015),  
Search Committee, Genetics and metabolic disease position (2017)  
Search Committee, Molecular genetics (2018-2019)
- 2014-present Departmental Safety Committee
- 2015-present Departmental Graduate Committee
- 2012-2013 Hosting Visiting Scholar (Lee, Yangsoon, Kongju University)

### **4) Professional Development**

- Workshop “Big Data Workshop”, 2017
- Workshop “Survival skills for assistant professors”, 2016
- UNL teaching and learning symposium, “Future learning technologies”, 2016
- UNL teaching and learning symposium “Handling large classroom”, 2015
- IANR Grant Writing Seminar, 2014
- IANR Road Scholar Trip, 2014
- NIH regional Seminar at Washington DC, 2012 (UF)
- College of Agriculture and Liberal Sciences Teaching Excellence Workshop, 2012 (UF)
- College of Agriculture and Liberal Sciences Teaching Enhancement Symposium, 2011(UF)
- NIH Grant Writing Workshop held by IFAS, 2011 (UF)