

CURRICULUM VITAE

Arion Kennedy, PhD

Vanderbilt University
Department of Molecular Physiology & Biophysics
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Education:

- 2004-2009 University of North Carolina at Greensboro
Ph.D., Nutrition
Dissertation: Anti-obesity Mechanisms of CLA Isomers in Primary Cultures of Human Adipocytes
Advisor: Michael K. McIntosh, Ph.D.
- 2001-2003 Florida A&M University, Tallahassee, FL
M.S., Chemistry
Thesis: A Spectroscopic Study of the Electronic and Protein Structural Properties of Hemerythrin from *Phascolopsis gouldii*
Advisor: Maurice Edington, Ph.D.
- 1997-2001 Florida A&M University, Tallahassee, FL
B.S., Chemistry

Professional Experience:

- 2014-Present *Research Instructor*
Principle Investigator: Alyssa Hasty, PhD
Molecular Physiology and Biophysics
Vanderbilt University Medical Center, Nashville, TN
- 2009-2013 *Research Fellow/Molecular Endocrinology Trainee*
Principle Investigator: Alyssa Hasty, PhD
Molecular Physiology and Biophysics
Vanderbilt University Medical Center, Nashville, TN
- 2003-2004 *Biomedical Research Training Fellow*
Principle Investigator: Silvia Santamarina-Fojo, MD, PhD
Molecular Disease Branch
National Institute of Health/NHLBI, Bethesda, MD
- 2000-2003 *Laboratory Assistant*
Principle Investigator: Maurice Edington, PhD
Department of Chemistry
Florida A&M University, Tallahassee, FL

Professional Organizations

The Endocrine Society
NIDDK-Network of Minority Health Research Investigators
American Diabetes Association

American Society of Nutrition
American Chemical Society

Professional Activities:

2016-2017 American Heart Association Vascular Endothelial Biology Peer Review Group
2015-2017 Editorial board, *Journal of Nutritional Biochemistry*
2015-2017 Reviewer for *Journal of Nutritional Biochemistry, Translational Research, Nutrition Research, Circulation Research and Diabetes*
2016 Vanderbilt University Women in Science and Engineering-Science Outreach Committee

Honors and Awards:

2017 Provost Research Studio Vanderbilt University
2015 First Place Oral Presentation, Boshell Research Day at Auburn University
2013 Daryl Granner Vanderbilt Diabetes Scholar (One Vanderbilt postdoctoral fellow named as scholar per year)
2013 Travel Scholarship to Keystone Symposia A5: "Emerging Topics in Immune System Plasticity", Santa Fe, NM, January 2013

Teaching Activities:

2012-2017 Molecular Endocrinology of Obesity and Diabetes, Flextime Molecular Physiology and Biophysics
2010-2011 Obesity Intercession Group Leader, Vanderbilt University School of Medicine Capstone Course

Research Supervision (Independent of Dr. Hasty):

Name	Position	Period
Kallan Hoover	Undergraduate Researcher	2017
Rida Kahn	REHSS High School Summer Student	2017
Sherrina Wang	REHSS High School Summer Student	2016
Shannon Townsend	Graduate Student	2016
Isis West	REHSS High School Summer Student	2015
Jordan Comstock	Undergraduate Researcher	2011-2012
Laurel Jackson	Graduate Student	2011
Andrea Hill	Graduate Student	2011
Carly Loveland	REHSS High School Summer Student	2010
Mary Black	Graduate Student	2009

Funding Approved

Active:

Funding Agency: NIH/NHLBI-Grant number: K01HL121010
Title of Project: The Role of CD8⁺ T Cells in the Development of Nonalcoholic Fatty Liver Disease
Role: PI
Dates: January 2014-December 2018

Submitted:

Funding Agency: NIDDK-Grant number: GRANT12504260
Title of Project: The Impact of Fructose Metabolism on Hepatic Non-Parenchymal Cell Polarization
Role: PI

Completed:

Funding Agency: Vanderbilt Institute for Clinical and Translation Research

Title of Project: Investigating Hepatic Immune Cells in Obese Patients with Nonalcoholic Fatty Liver Disease

Role: PI

Dates: May 2016-May 2017

Funding Agency: UNCF-Merck Postdoctoral Fellowship

Title of Project: The Role of CD8⁺ T Cells in the Development of Nonalcoholic Fatty Liver Disease

Role: PI

Dates: March 2013-January 2014

Funding Agency: American Diabetes Association

Title of Project: Postdoctoral Fellowship- Function of Intrahepatic Lymphocytes in the Progression of Nonalcoholic Steatohepatitis

Role: Trainee

Dates: January 2011-March 2013

Funding Agency: UNCF-Merck Graduate Dissertation Fellowship

Title of Project: Microarray Analysis of Conjugated Linoleic Acid in Cultures of Primary Human Adipocytes

Role: PI

Dates: September 2006-September 2008

Funding Agency: NIH/NIDDK-Grant number: 1F31DK076208

Title of Project: NRSA Fellowship-Anti-Obesity Mechanism of Conjugated Linoleic Acid in Primary Human Adipocytes

Role: Trainee

Dates: August 2006-May 2009

Invited Oral Presentation:

1. CD8⁺ T Cells Promote the Activation of Hepatic Stellate Cells in Obese Nonalcoholic Fatty Liver Disease. Cleveland Clinic Departments of Pathobiology and Gastroenterology Seminar. Cleveland, OH October 31, 2017.
2. Vitamin D Deficiency in Obese and Diabetic African Americans. National Organization of Blacks in Dietetics and Nutrition Science Symposium. Chicago, IL October 22, 2017.
3. CD8⁺ T Cells Promote the Activation of Hepatic Stellate Cells in Obese Nonalcoholic Fatty Liver Disease. North Carolina Central University Biomedical/Biotechnology Research Institute Seminar. April 11, 2017.
4. Regulation of Stellate Cell Activation in Nonalcoholic Fatty Liver Disease. Vanderbilt DRTC Friday Seminar Series. December 2, 2016.
5. CD8⁺ T Cells and NASH. Presented at the FASEB Immunological Aspects of Obesity, Big Sky, MT August 4, 2016.

6. Function of CD8⁺T Cells in Nonalcoholic Fatty Liver Disease. Presented at the Nutrition and Obesity Research Center, University of Alabama at Birmingham, Birmingham, AL March 17, 2016.
7. CD8⁺ T Cells Regulate the Activation of Hepatic Stellate Cells in Nonalcoholic Fatty Liver Disease. Presented at the Tennessee Physiological Society Fall Meeting, Chattanooga, TN October 9, 2015.
8. Role of CD8⁺ T Lymphocytes in Nonalcoholic Steatohepatitis. Presented at the South Eastern Lipid Research Conference, Pine Mountain, GA September 27-29, 2012.

Poster Presentations:

1. Kennedy, A., Webb, C., Orr, J.S., Gruen M.L., Hasty, A.H. 2014. CD8⁺ T Cells Impact The Activation Of Hepatic Stellate Cell In Nonalcoholic Fatty Liver Disease. Keystone Symposia Fibrosis: From Bench to Bedside. 2014. Keystone, CO.
2. Kennedy, A., Orr, J.S., Webb, C., Gruen M.L., Hasty, A.H. 2013. CD8⁺ T cells express a Th2 Phenotype during the development of Nonalcoholic Fatty Liver Disease. Keystone Symposia Emerging Topics in Immune System Plasticity. 2013. Santa Fe, NM.
3. Kennedy, A., Hasty, A.H. 2011. Hyperlipidemia Regulates Hepatic Immune Cell Infiltration. South East Lipid Research Conference. 2011. Pine Mountain, GA.
4. Kennedy, A., Surmi, B.K., ML Gruen, DA Gutierrez, Hasty, A.H. 2010. MIP-1 α deficiency attenuates high-fat diet induced dyslipidemia in hyperlipidemic mice. American Diabetes Association. 2010. Orlando, FL.

Peer-Reviewed Publications:

1. McDonnell, W., Koethe, J.R., Mallal, S., Pilkinton, Kirabo, A., Hasty, A.H., Kennedy, A.J. 2017. High CD8 T Cell Receptor Clonality and Altered CDR3 Properties in Adipose Tissue of Obese Mice. *JCI Insight*. Submitted.
2. Kennedy, A., Pacheco, C.M., Webb, C.D., Gruen, M.L., Hasty, A.H. 2017. CD8⁺ T Cells Promote the Activation of Hepatic Stellate Cells in Nonalcoholic Fatty Liver Disease. *Journal Hepatology*. Submitted.
3. Koethe, J.R., McDonnell, W., Kennedy, A., Abana, C.O., Pilkinton, M., Setliff, I., Barnett, L., Hager, C.C., Kalams, S. A., Hasty, A., Mallal, S. 2017. Adipose Tissue Shows Greater CD8⁺ T cell Activation and Distinct Receptor Usage Compared to Blood in HIV-infected Persons. *JAIDS*. Accepted.
4. Orr, J.S., Kennedy, A., Hill, A.A., Anderson-Baucum, E.K., Hubler, M., Hasty, A.H. 2016. CC-Chemokine Receptor 7 (CCR7) Deficiency Alters Adipose Tissue Leukocyte Populations in Mice. *Physiological Reports*. E12971.
5. Hubler, M., Kennedy, A., 2015. Role of Lipids in the Metabolism and Activation of Immune Cells. *J. Nutr Biochem*. 34:1-7.
6. Hill, A.H., Anderson-Baucum, E.K., Kennedy, A., Webb, C.D., Yull, F.E., Hasty, A.H. 2015. Activation of NF- κ B Drives the Enhanced Survival of Adipose Tissue Macrophages in an Obesogenic Environment. *Molecular Metabolism*. 4: 665-677.

7. Bolus, W. R., Gutierrez, D.A., Kennedy, A., Anderson, E.K., Hasty, A.H. 2015. CCR2 Deficiency Leads to Eosinophilia, Alternative Macrophage Activation, and Type 2 Cytokine Expression in Adipose Tissue. *J. Leukocyte Biology*. 98:467-477.
8. Kennedy, A., Webb, C., Hill, A., Gruen M.L., Jackson, L., Hasty, A.H. 2013. Loss of CCR5 Results in Glucose Intolerance in Diet-Induced Obese Mice. *Am. J. of Phys. Endo. Metab.* 305:E897-906.
9. Anderson, E.K., Gutierrez, D.A., Kennedy, A., Hasty, A.H. 2013. Weight Cycling Increases T cell Accumulation in Adipose Tissue and Impairs Glucose Tolerance. *Diabetes*. 62:3180-188.
10. Orr, J.S., Kennedy, A., Hasty, A.H. 2013. Isolation of Adipose Tissue Immune Cells. *JoVe*.
11. Orr, J.S., Kennedy, A., Anderson, E.K., Webb, C., Fordahl, S.C., Erikson, K.M., Zhang, Y., Etzerodt, A., Moestrup, S.K., Hasty, A.H. 2013. Obesity Impairs Adipose Tissue Macrophage and Systemic Iron Handling. *Diabetes*. 63:421-432.
12. Martinez, K., Shyamasundar, S., Kennedy, A., Chuang, C.C., Marsh, A., Kincaid, J., Reid, T., McIntosh, M.K. 2013. Diacylglycerol Kinase Inhibitor R59022 Attenuates Conjugated Linoleic Acid-Mediated Inflammation in Human Adipocytes. *J. Lipid Res*. 54:662-670.
13. Kang, L., Lantier, L., Kennedy, A., Bonner, J.S., Mayes, W., Bracy, D., Bookbinder, L., Hasty, A., Thompson, C., Wasserman, D. 2013. Hyaluronan Accumulates with High Fat Feeding and Contributes to Insulin Resistance. *Diabetes*. 62:1888-1896.
14. Kennedy, A., Gruen, M. Gutierrez, D., Surmi, B., Orr, J., Webb, C., Hasty, A. 2012. Absence of Bone Marrow Derived Macrophage Inflammatory Protein-1 α Protects Against Atherosclerosis and Adipose Tissue Expansion. *PLoS One*. 7:e31508.
15. Gutierrez, D.A., Kennedy, A., Orr, J.S., Anderson, E.K., Webb, C.D., Gerrald, W.K., Hasty, A.H. 2011. Aberrant Accumulation of Undifferentiated Myeloid Cells in the Adipose Tissue of CCR2 Deficient Mice Delays Improvements in Insulin Sensitivity. *Diabetes*. 60:2820-2829.
16. Martinez, K., Kennedy, A., McIntosh, M.K. 2011. JNK Inhibition by SP600125 Attenuates trans-10, cis-12 Conjugated Linoleic Acid-Mediated Regulation of Inflammatory and Lipogenic Gene Expression. *Lipids*. 46:885-892.
17. Chuang, C.C., Bumrungpert, A., Kennedy, A., Overman, A., West, T., Dawson, B., McIntosh, M.K. 2011. Grape Powder Extract Attenuates Tumor Necrosis Factor α -Mediated Inflammation and Insulin Resistance in Primary Cultures of Human Adipocytes. *J. Nutr. Biochem*. 22:89-94.
18. Kennedy, A., Ellacott, K., King, V., Hasty, A. 2010. Mouse Models of the Metabolic Syndrome. *Disease Models and Mechanisms*. 3:156-166.
19. Kennedy, A., Martinez, K., Schmit, S., Mandrup, S., LaPoint, K., McIntosh, M. 2010. Antiobesity Mechanisms of Action of Conjugated Linoleic Acid. *J. Nutr. Biochem*. 21:171-179.

20. Chuang, C.C., Martinez, K., Xie, G., Kennedy, A., Bumrungpert, A., Overman, A., Jia, W., McIntosh, M.K. 2010. Quercetin is Equally or More Effective than Resveratrol in Attenuating Tumor Necrosis Factor- α Mediated Inflammation and Insulin Resistance in Primary Human Adipocytes. *Am. J. Clin. Nutr.* 92:1511-1521.
21. Martinez, K., Kennedy, A., and McIntosh, M. Chapter 23: Conjugated Linoleic Acid. *Encyclopedia of Dietary Supplements*. Second edition. 2010.
22. Martinez, K., Kennedy, A., Walker West, T., Milatovic, D., Aschner, M., McIntosh, M. 2009. Trans-10, cis-12 Conjugated Linoleic Acid (CLA)-Mediated Inflammatory Signaling: Essential Role of Adipocytes in Initiating Cross-talk with Preadipocytes. *JBC*. 285:17701-17712.
23. Kennedy, A., Chung, S., LaPoint, K., West, T., Hopkins, R., Andersen, K., Schmidt, S., Mandrup, S., McIntosh, M. 2009. 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.
24. Bumrungpert, A., Kalpravidh, R.W., Chitchumroonchokchai, C., Chuang, C.C., West, T., Kennedy, A., McIntosh, M. 2009. Xanthenes from Mangosteen Prevent Lipopolysaccharide-Mediated Inflammation and Insulin Resistance in Primary Cultures of Human Adipocytes. *J. Nutr.* 139(6):1185-91.
25. Kennedy, A., Overman, A., Martinez, K., LaPoint, K., Hopkins, R., Chuang, C.C., West, T., McIntosh, M. 2009. Conjugated Linoleic Acid (CLA)-Mediated Inflammation and Insulin Resistance in Human Adipocytes is Attenuated by Resveratrol. *J. Lipid Res.* 50:225-232.
26. Kennedy, A., Martinez, K., Chung, C.C., LaPoint, K., McIntosh, M. 2009. Saturated Fatty Acid-Mediated Inflammation and Insulin Resistance in Adipose Tissue- Mechanisms of Action and Implications. *J. Nutr.* 139:1-4.
27. Kennedy, A., Chung, S., LaPoint, K., Fabiyi, O., McIntosh, M. 2008. Trans-10, Cis-12 Conjugated Linoleic Acid Antagonizes Ligand-Dependent PPAR γ Activity in Primary Cultures of Human Adipocytes. *J. Nutr.* 138:455-461. (Editors' Pick of the Month).
28. Chung, S., Lapoint, K., Martinez, K., Kennedy, A., Boysen-Sandberg, M., McIntosh, M.K. 2006. Preadipocytes mediate LPS-induced Inflammation and Insulin Resistance in Primary Cultures of Newly Differentiated Human Adipocytes. *Endocrinology*. 147: 5340-5351.
29. Freeman, L., Kennedy, A., Wu, J., Bark, S., Remaley, A.T., Santamarina-Fojo, S., Brewer, H.B. Jr. 2004. The Orphan Nuclear Receptor LXR-1 activates the ABCG5/ABCG8 Intergenic Promoter. *J. Lipid Res.* 45:1197-206.