

# CURRICULUM VITAE

**Name:** Susan J. Burke, Ph.D.

**Contact information:** Laboratory of Immunogenetics  
Pennington Biomedical Research Center  
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## Academic Positions

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2016-Present Assistant Professor-Research, Laboratory of Immunogenetics, Pennington Biomedical Research Center, Baton Rouge, LA

2013-2016 Senior Post-Doctoral Fellow, Laboratory of Islet Biology and Inflammation, Pennington Biomedical Research Center, Baton Rouge, LA  
Mentor: J. Jason Collier, Ph.D.

2009-2013 Post-Doctoral Research Associate, Department of Nutrition, University of Tennessee-Knoxville, Knoxville, TN  
Mentor: J. Jason Collier, Ph.D.

## Education

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2007-2009 **Ph.D.**  
Division of Endocrinology and Metabolism, Biochemistry and Molecular Genetics Graduate Program, University of Pittsburgh, Pittsburgh, PA (transferred from LSUHSC to Pitt in 2007). Mentor: Donald K. Scott, Ph.D.

2004-2005 Department of Biochemistry, Louisiana Health Sciences Center, New Orleans, LA  
Mentor: Donald K. Scott, Ph.D.

2000-2004 **B.Sc. Biochemistry** (First Class Honours)  
University College Cork, Co. Cork, Republic of Ireland

## Publications

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### ARTICLES IN PEER-REVIEWED JOURNALS

1. J. Jason Collier, Pili Zhang, Kim-Brent Pedersen, **Susan J. Burke**, John W. Haycock and Donald K. Scott. (2007) c-Myc and ChREBP Regulate Glucose-mediated Expression of the L-type Pyruvate Kinase Gene in INS-1-derived 832/13 cells. *American Journal of Physiology-Endocrinology and Metabolism*, 293(1): E48-56.
2. **Susan J. Burke**, J. Jason Collier, and Donald K. Scott. (2009) Glucose-mediated Induction and cAMP-

directed Repression of the L-PK Gene Requires Modifications of Histones H3 and H4 and Recruitment/Derecruitment of Phosphorylated RNA Polymerase II Holoenzyme. *Journal of Molecular Biology*, 392(3): 578-88.

3. **Susan J. Burke**, J. Jason Collier, and Donald K. Scott. (2009) cAMP Opposes the Glucose-mediated Induction of the L-PK Gene by Preventing Recruitment of a Complex Containing CBP, HNF-4alpha, and ChREBP. *FASEB Journal*, 23 (9):2855-65.
4. J. Jason Collier, Susan J. Burke, Mary E. Eisenhauer, Danhong Lu, Renee C. Sapp, Carlie J. Frydman, and Shawn R. Campagna. (2011) Pancreatic  $\beta$ -cell Death in Response to Pro-inflammatory Cytokines is Distinct from Genuine Apoptosis. *PLoS ONE*, 6(7): e22485.
5. **Susan J. Burke** and J. Jason Collier. (2011) The Gene Encoding Cyclooxygenase-2 is Regulated by IL-1 $\beta$  and Prostaglandins in 832/13 Rat Insulinoma Cells. *Cellular Immunology*, 271(2):379-84.
6. **Susan J. Burke**, Matthew R. Goff, Barrett L. Updegraff, Danhong Lu, Patricia L. Brown, Steven C. Minkin, John P. Biggerstaff, Ling Zhao, Michael D. Karlstad, and J. Jason Collier. (2012) Regulation of the CCL2 gene in Pancreatic  $\beta$ -cells by IL-1 $\beta$  and Glucocorticoids: Role of MKP-1. *PLoS ONE*, 7 (10): e46986.
7. Jaanki Purohit, Pan Hu, **Susan J. Burke**, J. Jason Collier, Jiangang Chen, and Ling Zhao. (2013) The Effects of NOD Activation on Adipocyte Differentiation. *Obesity (Silver Spring)*, Apr; 21(4):737-47.
8. **Susan J. Burke**, Matthew R. Goff, Danhong Lu, David Proud, Michael D. Karlstad, and J. Jason Collier. (2013) Synergistic Expression of the CXCL10 Gene in Response to IL-1 $\beta$  and  $\gamma$ -IFN requires NF- $\kappa$ B, Phosphorylation of STAT1 at Tyr701, and Acetylation of Histones H3 and H4. *Journal of Immunology*, Jul 1; 191(1):323-36.
9. **Susan J. Burke**, Barrett L. Updegraff, Rachel M. Bellich, Matthew R. Goff, Danhong Lu, Steven C. Minkin Jr., Michael D. Karlstad, and J. Jason Collier. (2013) Regulation of iNOS Gene Transcription by IL-1 $\beta$  and IFN- $\gamma$  Requires a Co-activator Exchange Mechanism. *Molecular Endocrinology*, Oct; 27(10):1724-42.
10. **Susan J. Burke**, Danhong Lu, Tim E. Sparer, Thomas Masi, Matthew R. Goff, Michael D. Karlstad, and J. Jason Collier. (2014) NF- $\kappa$ B and STAT1 control CXCL1 and CXCL2 Gene Transcription. *American Journal of Physiology-Endocrinology and Metabolism*, 306(2): E131-E149.
11. **Susan J. Burke**, Danhong Lu, Tim E. Sparer, Michael D. Karlstad, and J. Jason Collier. (2014) Transcription of the gene encoding TNF- $\alpha$  is increased by IL-1 $\beta$  in rat and human islets and  $\beta$ -cell lines. *Molecular Immunology*, Jun 24; 62(1):54-62.
12. **Susan J. Burke** and J. Jason Collier. (2014) Insulinitis and Diabetes: A Perspective on Islet Inflammation. INVITED PEER-REVIEWED EDITORIAL, *Immunome Research. Special Issue: Cytokine Biology*, 10: e002. doi: 10.4172/1745-7580.S2.e002.
13. **Susan J. Burke**, Michael D. Karlstad, Danielle Reel, Jay Whelan, and J. Jason Collier. (2015) A Dietary Polyherbal Supplementation Decreases CD3+ Cell Infiltration into Pancreatic Islets and Prevents Hyperglycemia in Non-obese Diabetic Mice. *Nutrition Research*, 35(4): 328-336.
14. **Susan J. Burke**, Michael D. Karlstad, Kellie M. Regal, Tim E. Sparer, Danhong Lu, Carrie M. Elks, Ryan W. Grant, Jacqueline M. Stephens, David H. Burk and J. Jason Collier. (2015) CCL20 is elevated

- during obesity and differentially regulated by NF- $\kappa$ B subunits in pancreatic  $\beta$ -cells. *Biochimica et Biophysica Acta- Gene Regulatory Mechanisms*, 1849(6):637-652.
15. **Susan J. Burke**, Amanda L. May, Robert C. Noland, Danhong Lu, Marcela Brissova, Alvin C. Powers, Elizabeth M. Sherrill, Michael D. Karlstad, Shawn R. Campagna, Jacqueline M. Stephens, and J. Jason Collier. (2015) Thiobenzothiazole-modified Hydrocortisones Display Anti-inflammatory Activity with Preservation of Islet  $\beta$ -cell Function. *Journal of Biological Chemistry*, 290: 13401-13416.
  16. **Susan J. Burke** and J. Jason Collier. (2015) Chemokine Transcriptional Regulation: A Link to Pancreatic Islet Inflammation? INVITED REVIEW ARTICLE. *Biomolecules. Special Issue: Transcriptional Regulation of Pro-Inflammatory Genes*, 25(2), 1020-1034.
  17. **Susan J. Burke**, Krisztian Stadler, Danhong Lu, Evanna Gleason, Anna Han, Dallas R. Donohoe, Richard C. Rogers, Gerlinda E. Hermann, Michael D. Karlstad, and J. Jason Collier. (2015) IL-1 $\beta$  Reciprocally Regulates Chemokine and Insulin Secretion in pancreatic  $\beta$ -cells via NF- $\kappa$ B. *American Journal of Physiology-Endocrinology and Metabolism*, 309(8): E715-26.
  18. Vijay Hegde, Ha-Na Na, Olga Dubuisson, **Susan J. Burke**, J. Jason Collier, David Burk, Tamra Mendoza, and Nikhil V. Dhurandhar. (2016) An Adenovirus-derived Protein: A Novel Candidate for Anti-diabetic Drug Development. *Biochimie*, 121: 140-50
  19. **Susan J. Burke**, Michael D. Karlstad and J. Jason Collier. (2016) Pancreatic Islet Responses to Metabolic Trauma. *Shock*, Sep; 46(3):230-238. Featured on the journal cover.
  20. Thomas Laeger, Diana C. Albarado, **Susan J. Burke**, Lexus Trosclair, John Hedgepeth, Hans-Rudolf Berthoud, Thomas W. Gettys, J. Jason Collier, Heike Münzberg, and Christopher D. Morrison. (2016) Metabolic responses to dietary protein restriction require an increase in FGF21 that is delayed by the absence of GCN2. *Cell Reports*, Jul 19; 16(3): 707-16.
  21. **Susan J. Burke**, Michael D. Karlstad, Adrianna E. Eder, Kellie M. Regal, Danhong Lu, David H. Burk, J. Jason Collier. (2016) Pancreatic  $\beta$ -cell Production of CXCR3 ligands Precedes Diabetes Onset. *BioFactors*, 42: 703–715.
  22. **Susan J. Burke**, Heidi M. Batdorf, Adrianna E. Eder, Michael D. Karlstad, David H. Burk, Robert C. Noland, Z. Elizabeth Floyd and J. Jason Collier. (2017) Oral Corticosterone Administration Reduces Insulinitis but Promotes Insulin Resistance and Hyperglycemia in Male Non-obese Diabetic Mice. *American Journal of Pathology*, 187: 614-626.
  23. J. Jason Collier, Tim E. Sparer, Michael D. Karlstad and **Susan J. Burke**. (2017) Islet Inflammation: An Emerging Role for Chemokines. INVITED REVIEW ARTICLE. *Journal of Molecular Endocrinology*. Jul; 59(1):R33-R46. One of the top 10 most downloaded articles in this journal in 2017.
  24. **Susan J. Burke**, Heidi M. Batdorf, David H. Burk, Robert C. Noland, Adrianna E. Eder, Matthew S. Boulos, Michael D. Karlstad, and J. Jason Collier. (2017) *db/db* Mice Exhibit Features of Human Type 2 Diabetes that are Not Present in Weight matched C57BL/6J mice fed a Western Diet. *Journal of Diabetes Research*. 2017:8503754.
  25. Claudia Kruger, **Susan J. Burke**, J. Jason Collier, J. Michael Salbaum, Claudia Kappen, Krisztian Stadler. (2018) Lipid Peroxide Radicals Regulate Podocyte Migration and Cytoskeletal Structure Through Redox Sensitive RhoA Signaling. *Redox Biology*, 16: 248-254.

26. **Susan J. Burke**, Heidi M. Batdorf, Thomas M. Martin, David H. Burk, Robert C. Noland, Michael D. Karlstad, and J. Jason Collier. (2018) Liquid Sucrose Consumption Promotes Obesity, Enhances Lipid Storage in Liver, and Impairs Glucose Tolerance without Perturbing Circulating Insulin Levels. *Obesity*. Jul; 26(7):1188-1196.
27. **Susan J. Burke**, Heidi M. Batdorf, David H. Burk, Thomas M. Martin, Tamra Mendoza, Krisztian Stadler, Wateen Alami, Michael D. Karlstad, Matthew J. Robson, Randy D. Blakely, Randall L. Mynatt and J. Jason Collier. (2018) Pancreatic Deletion of Interleukin-1 Receptors Disrupts Whole Body Glucose Homeostasis and Promotes Islet  $\beta$ -cell De-differentiation. *Molecular Metabolism*, Aug (14): 95-107.
28. John Mark McLain, Wateen H. Alami, Zachery T. Glovak, Chris R. Cooley, **Susan J. Burke**, J. Jason Collier, Helen A. Baghdoyan, Michael D. Karlstad, and Ralph Lydic. (2018) Sleep Fragmentation Delays Wound Healing in a Mouse Model of Type 2 Diabetes. *Sleep*, Nov 1;41(11). Editor's Choice for November Issue.
29. Scott E. Fuller, Tai-Yu Huang, Jacob Simon, Heidi M. Batdorf, Nabil M. Essajee, Matthew C. Scott, Callie M. Waskom, John M. Brown, **Susan J. Burke**, J. Jason Collier, Robert C. Noland. (2019) Low-intensity exercise induces acute shifts in liver and skeletal muscle substrate metabolism, but not chronic adaptations in tissue oxidative capacity. *Journal of Applied Physiology*. Jul 1; 127(1):143-156.
30. Cristal M. Hill, Thomas Laeger, Madeleine Dehner, Diana C. Albarado, Blaise Clarke, Desiree Wanders, **Susan J. Burke**, J. Jason Collier, Emily Qualls-Creekmore, Samantha Solon-Biet, Stephen J. Simpson, Hans-Rudolf Berthoud, Heike Münzberg and Christopher D. Morrison. (2019) FGF21 signals protein status to the brain and adaptively regulates food choice and metabolism. *Cell Reports*, June 4; 27(10): 2934-47.
31. **Susan J. Burke**, Heidi M. Batdorf, Tai-Yu Huang, Joseph W. Jackson, Katarina A. Jones, Thomas M. Martin, Kristin E. Rohli, Michael D. Karlstad, Tim E. Sparer, David H. Burk, Shawn R. Campagna, Robert C. Noland, Paul L. Soto, and J. Jason Collier. (2019) One week of continuous corticosterone exposure impairs hepatic metabolic flexibility, promotes islet  $\beta$ -cell proliferation, and reduces physical activity in male C57BL/6J mice. *Journal of Steroid Biochemistry and Molecular Biology*. Dec; 195:105468.
32. Tai-Yu Huang, Felicia R. Goldsmith, Scott E. Fuller, Jacob Simon, Heidi M. Batdorf, Matthew C. Scott, Nabil M. Essajee, John M. Brown, David H. Burk, Christopher D. Morrison, **Susan J. Burke**, J. Jason Collier, Robert C. Noland. (2020) Response of Liver Metabolic Pathways to Ketogenic Diet and Exercise are not Additive. *Medicine and Science in Sports and Exercise*. Jan; 52(1):37-48.
33. Richard C. Rogers, **Susan J. Burke**, J. Jason Collier, Sue Ritter, and Gerlinda E. Hermann. (2020) Evidence that hindbrain astrocytes in the rat detect low glucose with a glucose transporter 2-phospholipase C- calcium release. *American Journal of Physiology-Regulatory, Integrative and Comparative Physiology*. Jan 1; 318(1):R38-R48.
34. J. Jason Collier, Heidi M. Batdorf, Tamra M. Mendoza, Thomas M. Martin, Jingying Zhang, Randall L. Mynatt, and **Susan J. Burke**. (2020) Hepatic IKK epsilon expression is dispensable for high-fat feeding-induced increases in liver lipid content and alterations in glucose tolerance. *American Journal of Physiology-Endocrinology and Metabolism*. Jan 1; 318(1):E11-E21.
35. Anik Boudreau, **Susan J. Burke**, J. Jason Collier, Allison J. Richard, David M. Ribnicky, and Jacqueline M. Stephens. (2020) Mechanisms of *Artemisia scoparia*'s anti-inflammatory activity in adipocytes, macrophages, and pancreatic  $\beta$ -cells. *Obesity*. Sep;28(9):1726-1735.

36. Chris R. Cooley, John Mark McLain, Samuel D. Dupuy, Adrianna E Eder, Molly Wintenberg, Kimberly Kelly-Wintenberg, Alan Wintenberg, J. Jason Collier, **Susan J. Burke**, and Michael D. Karlstad. (2020) Indirect, Non-Thermal Atmospheric Plasma Promotes Bacterial Killing in vitro and Wound Disinfection in vivo Using Monogenic and Polygenic Models of Type 2 Diabetes (without adverse metabolic complications). *Shock*. Nov;54(5):681-687.
37. J. Jason Collier, Heidi M. Batdorf, Thomas M. Martin, Kristen E. Rohli, David H. Burk, Danhong Lu, Chris R. Cooley, Michael D. Karlstad, Joseph W. Jackson, Tim E. Sparer, Jingying Zhang, Randall L. Mynatt, and **Susan J. Burke**. Pancreatic, but not myeloid-cell, expression of IL-1 $\alpha$  is required for maintenance of islet insulin secretion and whole body glucose homeostasis. *In Press. Molecular Metabolism*.
38. Amber Gray, Aleksandra Antevska, Benjamin Link, Bryan Bogin, **Susan J. Burke**, Samuel Dupuy, J. Jason Collier, Zachary Levine, Michael D. Karlstad, Thanh Do.  $\alpha$ -CGRP Disrupts Amylin Fibrillization and Regulates Insulin Secretion: Implications on Diabetes and Migraine. *In Review. Journal of the American Chemical Society*.
39. **Susan J. Burke**, Jessica L. Taylor, Heidi M. Batdorf, Robert C. Noland, David H. Burk, Yongmei Yu, Z. Elizabeth Floyd, and J. Jason Collier. The Ubiquitin Ligase SIAH2 Negatively Regulates Glucocorticoid Receptor Activity and Abundance. *In Review. Biomedicines*.

## EDITORIALS, COMMENTARIES, AND BOOK CHAPTERS

1. J. Jason Collier, **Susan J. Burke**, Michael D. Karlstad. (2017) What's New in *SHOCK*, November 2017? *Shock*, Nov; 48(5):501-503.
2. J. Jason Collier and **Susan J. Burke**. (2018) Pancreatic Islet Beta-Cell Replacement Strategies. In: Gimble J., Marolt Presen D., Oreffo R., Wolbank S., Redl H. (eds) Cell Engineering and Regeneration. Reference Series in Biomedical Engineering. Springer, Cham. [https://doi.org/10.1007/978-3-319-08831-0\\_3](https://doi.org/10.1007/978-3-319-08831-0_3)

## CONFERENCE ABSTRACTS

1. **Susan J. Burke**, J. Jason Collier, and Donald K. Scott. (2007) Regulation of the L-PK and ACC Genes by Glucose and cAMP: Role of CEBP/beta and ChREBP. *Diabetes* 56: A13. American Diabetes Association 67<sup>th</sup> Scientific Sessions. Oral Presentation.
2. **Susan J. Burke**, J. Jason Collier, and Donald K. Scott. (2008) Repression of the Glucose-stimulated L-type Pyruvate Kinase Gene by cAMP Reveals Key Roles for HNF4 and the Creb Binding Protein. *Diabetes* 57: A79. American Diabetes Association 68<sup>th</sup> Scientific Sessions. Oral Presentation.
3. **Susan J. Burke**, J. Jason Collier, and Donald K. Scott. (2009) Histone acetylation status and promoter association of RNA Polymerase II determine the inductive and repressive capacities of glucose and cAMP, respectively, on ACC gene expression. *Diabetes* 58: Suppl 1. American Diabetes Association 69<sup>th</sup> Scientific Sessions. Poster Presentation.
4. **Susan J. Burke**, J. Jason Collier, and Donald K. Scott. (2009) Glucose-mediated induction and cAMP-directed repression of the L-PK gene is associated with histone modifications and recruitment/derecruitment of phosphorylated RNA polymerase II at the promoter. *Diabetes* 58: Suppl 1. American Diabetes Association 69<sup>th</sup> Scientific Sessions. Poster Presentation.

5. **Susan J. Burke** and J. Jason Collier. (2010) Cytokine-mediated induction of the monocyte chemoattractant protein -1 (MCP-1) gene requires the p65 subunit of NF- $\kappa$ B and the CAAT Enhancer Binding Protein beta (C/EBP  $\beta$ ). *Diabetes* 59: Suppl 1. American Diabetes Association 70<sup>th</sup> Scientific Sessions. Poster (Tour) Presentation.
6. **Susan J. Burke**, Danhong Lu, Thomas C. Becker, Jamison Norwood, Michael D. Karlstad, Patricia L. Brown, Steven Minkin, John Biggerstaff, and J. Jason Collier. (2011) Regulation of the Inducible Nitric Oxide Synthase (iNOS) Gene by Cytokines Requires Phosphorylation of the p65 Subunit of NF- $\kappa$ B at Ser276 and Ser536 and Signal Transducer and Activator of Transcription 1 (STAT1) at Tyr701. *Diabetes*. American Diabetes Association 71<sup>st</sup> Scientific Sessions. Poster Presentation.
7. J. Jason Collier, **Susan J. Burke**, Mary E. Eisenhauer, Danhong Lu, Renee C. Sapp, Carlie J. Frydman, and Shawn R. Campagna. (2011) Metabolite Profiling by Tandem Mass Spectrometry Reveals Differences between Pro-inflammatory Cytokines and Genuine Inducers of Apoptosis in Rat  $\beta$ -cell Lines. *Diabetes*. American Diabetes Association 71<sup>st</sup> Scientific Sessions. Oral Presentation.
8. **Susan J. Burke**, Matthew R. Goff, Danhong Lu, David Proud, Michael D. Karlstad, and J. Jason Collier. (2012) IL-1 $\beta$  and  $\gamma$ -IFN Synergize to Induce Expression of the CXCL10 Gene in Rat Islets and  $\beta$ -Cell Lines. American Diabetes Association 72<sup>nd</sup> Scientific Sessions. Poster (Tour) Presentation.
9. **Susan J. Burke**, Michael D. Karlstad, Danielle Reel, Michael F. McEntee, Jay Whelan, and J. Jason Collier. (2014) A Polyherbal Dietary Intervention Preserves Functional Islet  $\beta$ -cell Mass in Non-obese Diabetic Mice. *Experimental Biology - Antioxidant and Anti-inflammatory Effects of Dietary Bioactive Compounds*. Oral Presentation.
10. **Susan J. Burke**, Amanda L. May, Danhong Lu, Marcela Brissova, Robert C. Noland, Michael D. Karlstad, Shawn R. Campagna and J. Jason Collier. (2014) Thiobenzothiazole-modified hydrocortisones display anti-inflammatory activity with retention of rodent islet  $\beta$ -cell function. American Diabetes Association 74<sup>th</sup> Scientific Sessions. Poster (Tour) Presentation.
11. Vijay Hedge, Ha-Na Na, Olga Dubuisson, **Susan J. Burke**, J. Jason Collier, David Burk, Nikhil V. Durandhar. (2014) Insulin Sparing Action of an Adenoviral Protein: A Novel Template to Improve Insulin Resistance Linked to Obesity. *ObesityWeek 2014*.
12. Gerlinda E. Hermann, Katie M. Vance, J. Jason Collier, **Susan J. Burke**, and Rick C. Rogers. (2015) Botanical extracts: in vitro calcium imaging. *Society for the Study of Ingestive Behavior (SSIB)*.
13. Scott E. Fuller, **Susan J. Burke**, Jacob Simon, M. Scott, J. Jason Collier, and Robert C. Noland. (2016) Characterization of differential metabolic responses to various treadmill exercise protocols in mice. *The American Physiological Society – Integrative Biology of Exercise Conference*.
14. **Susan J. Burke**, Adrianna E. Eder, Kellie M. Regal, Michael D. Karlstad, David H. Burk, Robert C. Noland, and J. Jason Collier. (2016) Oral Corticosterone Administration Reduces Insulinitis but Promotes Insulin Resistance and Hyperglycemia in Male Non-obese Diabetic Mice. *Experimental Biology*. Oral Presentation.
15. John M. McLain, Wateen H. Alami, Zachary T. Glovak, Christopher R. Cooley, **Susan J. Burke**, J. Jason Collier, Helen A. Baghdoyan, Ralph Lydic and Michael D. Karlstad. (2017) Sleep Fragmentation Delays Wound Healing in a Diabetic Mouse Model. *40<sup>th</sup> Annual Conference on Shock*.
16. Scott E. Fuller, Jacob Simon, Tai-Yu Huang, Heidi M. Batdorf, M. Scott, Callie M. Waskom, Nabil M. Essajee, **Susan J. Burke**, J. Jason Collier, Robert C. Noland. (2018) Moderate Intensity Endurance

Exercise Training Increases Muscle Glycogen Content but Does Not Alter Substrate Oxidation in C57BL/6 Mice. *Experimental Biology*.

17. Scott E. Fuller, Tai-Yu Huang, Felicia Goldsmith, Heidi M. Batdorf, M. Scott, John M. Brown, Nabil M. Essajee, **Susan J. Burke**, J. Jason Collier, Robert C. Noland. (2018) Effects of a Ketogenic Diet and Chronic Aerobic Exercise on C57BL/6 Mice. *Experimental Biology*.
18. **Susan J. Burke**, Heidi M. Batdorf, Thomas M. Martin, David H. Burk, Robert C. Noland, William D. Johnson, Christopher R. Cooley, Michael D. Karlstad, and J. Jason Collier. (2018) Liquid sucrose consumption promotes liver lipid accumulation, fat mass, and glucose intolerance without altering circulating insulin levels. *Experimental Biology*. Oral Presentation.
19. Claudia Kruger, **Susan J. Burke**, J. Jason Collier, Trang-Tiffany Nguyen, J. Michael Salbaum, Krisztian Stadler. (2018) Lipid Peroxidation Impacts Podocyte Migration and Cytoskeletal Structure Through Redox Sensitive RhoA Signaling. 12<sup>th</sup> International Podocyte Conference.
20. Tai-Yu Huang, Scott E. Fuller, Jacob Simon, Heidi M. Batdorf, Nabil M. Essajee, Felicia R. Goldsmith, Matthew C. Scott, Callie M. Waskom, John M. Brown, Myriam Baes, **Susan J. Burke**, J. Jason Collier, and Robert C. Noland. (2018) Peroxisomes in skeletal muscle play an important role in metabolic adaptations to exercise training. *Integrative Physiology of Exercise Conference, 2018, San Diego, CA*.
21. **Susan J. Burke**, Heidi M. Batdorf, Tai-Yu Huang, Robert C. Noland, Katarina Jones, Shawn R. Campagna, and J. Jason Collier. (2018) Glucocorticoids promote insulin resistance via metabolic inflexibility in liver but not skeletal muscle. *Obesity Week. Received a Special Recognition at Obesity Week 2018 conference: selected as one of the top 20 basic science posters from the nearly 1,000 abstracts that were submitted to showcase their work as an oral presentation.*

### **Presentations as Invited Speaker**

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- 2019 – University of Tennessee Graduate School Medical Seminar Series  
Title: Glucocorticoids: Mechanisms of Action in Health and Disease
- 2019 – Pennington Biomedical Research Foundation Scientific Dinner Series  
Title: The Many Faces of Diabetes: It's NOT all Type 2!
- 2012 – University of Tennessee, Knoxville, Comparative and Experimental Medicine and Public Health Research Symposium  
Title: IL-1 $\beta$ - mediated Regulation of the CCL2 gene in Pancreatic  $\beta$ -cells
- 2011 – University of Tennessee, Knoxville, Comparative and Experimental Medicine and Public Health Research Symposium  
Title: Cytokine-mediated Regulation of the iNOS gene by NF- $\kappa$ B and STAT1 in Pancreatic  $\beta$ -cells
- 2010 – University of Tennessee, Knoxville, Obesity Research Center.  
Title: Cytokine-mediated regulation of the MCP-1 gene by NF- $\kappa$ B

### **Internal Presentations**

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- 2020 – Pennington Biomedical Research Center Faculty Seminar  
Title: Compensatory Adaptive Responses of the Pancreatic Islet  $\beta$ -cell
- 2019 – Pennington Biomedical Research Center Faculty Seminar  
Title: Glucocorticoids: Mechanisms of Action in Health and Disease
- 2019 – Pennington Biomedical Research Center Scientific Retreat  
Title: Glucocorticoids: Mechanisms of Action in Health and Disease
- 2017 – Pennington Biomedical Research Center Faculty Seminar  
Title: Glucocorticoid Therapy and  $\beta$ -cell Function
- 2016 – Pennington Biomedical Research Center Faculty Seminar  
Title: Unraveling the Immunogenetics of Glucocorticoid Therapy
- 2015 – Pennington Biomedical Research Center Post-Doctoral Presentation  
Title: Engineering Better Glucocorticoids
- 2015 – Pennington Biomedical Research Center Scientific Retreat  
Title: Engineering Better Glucocorticoids
- 2014 – Pennington Biomedical Research Center Post-Doctoral Presentation  
Title: Thiobenzothiazole-modified hydrocortisones display anti-inflammatory activity with retention of rodent islet  $\beta$ -cell function
- 2014 – Pennington Biomedical Research Center Scientific Retreat  
Title: Chemokines and Islet Inflammation

### **Honors and Awards**

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- Award of ‘Highly Read Author’ for Pubmed ID 29038790: One of the top 5 most downloaded articles in Journal of Diabetes Research in 2017.
- Special Recognition in Basic Science Section at Obesity Week (2018): Poster selected as top 2% of all abstracts submitted.
- LA CaTS Visiting Scholar Award (2019)

### **Teaching Experience**

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*University of Tennessee - Knoxville*

- 2013 Spring Semester - Nutrition-512: Advances in Vitamin and Mineral Metabolism (Graduate Course)  
Vitamin D and Calcium Lecture (60 min Lecture)
- 2012 Fall Semester - Nutrition-311: Physiological Chemistry (Undergraduate Course)  
Review of Prokaryotic and Eukaryotic Cell Biology (60 min Lecture)
- 2012 Spring Semester - Nutrition-512: Advances in Vitamin and Mineral Metabolism (Graduate Course)  
Vitamin D Lecture (60 min Lecture)



Nutrition-313 Vitamins and Minerals (Undergraduate Course)  
Vitamin D Lecture (60 min Lecture)

FYS-129 Freshman Seminar Course (Nutrition Mythbusters)  
Alcohol: Positive and Negative Health Benefits (60 min Lecture)

2011 Fall Semester - FYS-129 Freshman Seminar Course (Nutrition Mythbusters)  
Alcohol: Positive and Negative Health Benefits (60 min Lecture)  
Nutritional Aspects of a Vegetarian Diet (60 min Lecture)

*University of Pittsburgh*

2008 Spring Semester - Graduate Teaching Assistant (Medical Microbiology): Prepared equipment and reagents for a group of 10 medical students in first-year Microbiology teaching laboratory, demonstrated experimental laboratory procedures, graded written quizzes based on experimental results collected by the students and lead discussion groups summarizing experimental concepts and techniques related to data collection in Medical Microbiology.

## **Service to the Discipline**

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### **EDITORIAL BOARD MEMBER**

- Shock (2020-2023)
- Metabolites (2020) Co-guest Editor of Special Issue: 'Islet Inflammation and Metabolic Homeostasis'
- Biomedicines (2021) Guest Editor of Special Issue: 'Emerging Paradigms in Insulin Resistance'

### **GRANT REVIEW ACTIVITY**

- LA CaTS Pilot Grants Program Reviewer (2017)
- Department of Defense: 2020 Peer Reviewed Medical Research Program (PRMRP) Discovery Awards Panel (2020)

### **JOURNAL REVIEW ACTIVITY**

*Ad hoc reviewer*

- American Journal of Physiology- Endocrinology and Metabolism
- BBA Gene Regulatory Mechanisms
- BBA Molecular Basis of Disease
- Biochimie
- British Journal of Pharmacology
- Cellular Immunology
- Cellular Signaling
- Cell Transplantation

- Diabetes
- Diabetes/Metabolism Research and Reviews
- Diabetes, Obesity and Metabolism
- Endocrinology
- Experimental Biology and Medicine
- Experimental Physiology
- International Journal of Obesity
- Journal of Applied Biomedicine
- Journal of Immunology
- Journal of Immunology Research
- Journal of Medical Virology
- Journal of Steroid Biochemistry and Molecular Biology
- Nutrients
- Obesity
- Oncotarget
- Plants
- PLoS ONE
- Scientific Reports
- Shock
- Theranostics

## PROFESSIONAL MEMBERSHIPS

- American Association for the Advancement of Science (AAAS)

## COMMITTEES

- Chair, PBRC Basic Sciences Recruitment Committee (2019)
- Chair, PBRC Employee Giving Campaign (2019)
- Member, PBRC COBRE Internal Advisory Committee (2019- )

## MEDIA APPEARANCES

- Interview for KATC-TV Lafayette (Aired July 1, 2015)
- Interview for *Community Concerns* Radio Show (August 27, 2015)

## Funding

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### Active

**P20 GM135002**

**Stephens (PD); Burke (Project PI)**

**03/01/2020 – 2/28/2023**

**Title: Role of Fatty Acid Oxidation in Islet Beta-Cell Function**

This research will investigate lipid metabolism in the pancreas, including the endocrine cells that make and secrete insulin, as an important regulatory component controlling the adaptive responses that alter insulin secretion and islet beta-cell growth during aging and obesity.

**Role: Mentored Project PI**

**P30 GM118430** **Gettys (PI)** **08/01/2020 – 07/31/2021**

**“Mentoring Obesity and Diabetes Research in Louisiana”**

**Title: Peroxisomal regulation of inflammation in pancreatic islet beta-cells**

This research will investigate the regulation of pancreatic islet inflammation in a mouse model of peroxisomal dysfunction.

**Role: Pilot and Feasibility PI**

**P30 DK072476** **Ravussin (PI)** **05/01/2019 – 04/30/2021**

**“Pennington/Louisiana NORC”**

**Title: Does inhibition of Cpt1 activity in pancreatic  $\beta$ -cells enhance insulin secretion?**

This research will investigate lipid metabolism in the pancreas, including the endocrine cells that make and secrete insulin, as an important regulatory component controlling the adaptive responses that alter insulin secretion and islet beta-cell growth during aging and obesity.

**Role: Pilot and Feasibility PI**

**R01 DK123183** **Collier (PI)** **07/01/2020-06/30/2025**

**Title: SGK1 is a regulator of islet beta-cell mass and secretory function**

This project uses a variety of novel mouse models to understand how signaling through the SGK1 protein regulates changes in  $\beta$ -cell growth versus regulating nutrient partitioning to control insulin secretion.

**Role: Co-Investigator**

**R01 DK108765** **Rogers (PI)** **08/01/2019-07/31/2021**

**Title: Astrocytes, Glucose Detection, and Counter-Regulation**

The proposed studies are focused on understanding the role of astrocytes to detect hypoglycemia, and, to initiate mechanisms providing a behavioral and physiological defense against dangerously low extracellular glucose concentrations. We hypothesize that astrocytes function as critical sensory elements that communicate directly with neurons involved in triggering glucoprivic feeding and the release of an array of hormones acting to counteract the effects of hypoglycemia. The results of this work will be directly applicable to the development of therapies useful in combating the long term effects of treatment-induced hypoglycemia in individuals with diabetes.

**Role: Co-Investigator**

**R03 AI151920** **Collier (PI)** **07/01/2020-06/30/2022**

**Title: Development of Mice with Conditional ICAM-1 Deletion**

The goal of this project is to generate a mouse with conditional *Icam-1* alleles, which is a novel research resource for studies of autoimmunity and tissue graft rejection.

**Role: Co-Investigator**

**Completed**

**P30 GM118430** **Gettys (PI)** **08/01/2017 – 07/31/2018**

**“Mentoring Obesity and Diabetes Research in Louisiana”**

**Title: Selective Glucocorticoid Receptor Agonist Compounds Suppress Inflammation in Pancreatic beta-cells.**

This research will investigate the suppression of pancreatic islet inflammation in a number of mouse models of autoimmunity using novel glucocorticoid receptor agonists.

**Role: Pilot and Feasibility PI**

**R21 AI138136**

**Collier (PI)**

**05/16/2018 - 04/30/2020**

**Title: A Unique Receptor Agonist Approach for Type 1 Diabetes Prevention.**

This research will identify whether novel glucocorticoid agonists prevent T1D by suppressing important inflammatory events critical to disease onset and progression. We anticipate that our strategy may also have broader relevance to other diseases with inflammatory components.

**Role: Co-Investigator**