

**NAME:** Christopher D. Morrison, Ph.D.

**ACADEMIC RANK:** John S. McIlhenny Professor of Nutritional Neuroscience

**EDUCATION:**

- 2003 T32 Postdoctoral Fellowship  
Dept. of Medicine, Div. of Metabolism, Endocrinology and Nutrition,  
University of Washington and Harborview Medical Center, Seattle, WA  
Advisor: Dr. Michael W. Schwartz
- 2001 Ph.D. Animal Science – Reproductive Physiology & Neuroendocrinology  
University of Missouri – Columbia  
Advisor: Dr. Duane H. Keisler  
Dissertation: Leptin and Neuropeptide Y as a Link between Body Fat, Fertility and Appetite in Ruminants
- 1997 B.S. Animal Science, Science and Technology Focus  
Louisiana State University - University Medal, Summa Cum Laude, Goldwater Research Scholar  
Honors Thesis Advisor: Dr. Timothy Ramsay and Dr. William Hansel  
Honors Thesis: The Expression and Function of a Leptin Receptor in the Bovine Ovary.

**PROFESSIONAL EXPERIENCE:**

- 2021-present Associate Executive Director for Basic Science, Pennington Biomedical Research Center, Baton Rouge, LA
- 2020-present John S. McIlhenny Professor of Nutritional Neuroscience, Neurosignaling Laboratory, Pennington Biomedical Research Center, Baton Rouge, LA
- 2020-present Associate Director, Metabolic Basis of Disease COBRE, Pennington Biomedical Research
- 2016-present Director, Animal Metabolism and Behavior Core, Pennington Biomedical Research Center, Baton Rouge, LA
- 2017-2020 Professor, Neurosignaling Laboratory, Pennington Biomedical Research Center, Baton Rouge, LA
- 2011-2017 Associate Professor, Neurosignaling Laboratory, Pennington Biomedical Research Center, Baton Rouge, LA
- 2008-2011 Assistant Professor, Neurosignaling Laboratory, Pennington Biomedical Research Center, Baton Rouge, LA
- 2003-2008 Research Assistant Professor, Neurosignaling Laboratory, Pennington Biomedical Research Center, Baton Rouge, LA
- 2001-2003 Senior Research Fellow, Dept. of Medicine, Div. of Metabolism, Endocrinology and Nutrition, Harborview Medical Center, Seattle, WA
- 1997-2001 U.S.D.A National Needs Graduate Fellow, Dept. of Animal Sciences, University of Missouri, Columbia, MO

## PROFESSIONAL ORGANIZATION MEMBERSHIPS:

Society for Neuroscience  
Society for the Study of Ingestive Behavior  
The Obesity Society

## HONORS AND AWARDS:

### General

Barry M. Goldwater Research Scholar, 1996  
University Medal, Louisiana State University, 1997  
U.S.D.A. National Needs Fellow, 1997 – 2001  
John S. McIlhenny Endowed Professorship, Pennington Biomedical Research Center, 2020

## GRANTS AND CONTRACTS:

### Active Research Support

*T32 DK064584*

Training in Obesity Research                      *06/01/2024 - 05/31/2029*

This T32 training award supports has supported postdoctoral research, training, and mentorship at Pennington Biomedical for over 20 years. Dr. Morrison joined at Co-PI during the current 5-year cycle, which supports 5 postdoctoral trainees conducting research across the breadth of Pennington Biomedical, including Basic Science, Clinical Research, and Population and Public Health Research. \$442,556 (Year 1)

Role: Co-Principal Investigator (Leanne Redman, contact PI)

*P20 GM135002*

*3/1/2020 – 1/31/2026 (NCE)*

*PI: Dr. Jacqueline Stephens*

Metabolic Basis of Disease: Center of Biomedical Research Excellence (COBRE) Center Grant.

This COBRE Center grant supports the research program of four junior faculty, all focused on the metabolic basis of disease, while also supporting an Administrative Core, Molecular Mechanisms Core, Preclinical Research Core, and Alterations and Renovations Component. Budget \$2,471,896 (Year 1)

Role: COBRE Associate Director, Director of Preclinical Research Core and Alteration/Renovation Component.

*P30 DK072476*

*5/01/2022 - 04/30/2026*

*PI: Eric Ravussin*

Pennington/Louisiana Nutrition Obesity Research Center (NORC)

Dr. Morrison serves as Director of the Animal Models and Phenotyping Core, with primary responsibility for core services related to the metabolic and behavioral phenotyping of rodent models. Budget \$1,061,140 (Yr 1)

Role: Director of Animal Models and Phenotyping Core

*R01DK131165*

*02/01/2023 – 01/31/2028*

*PI: David McDougal*

Evaluating the role of hypoleptinemia in impaired counterregulatory responses to hypoglycemia

The project focuses on leptin's role in the counterregulatory response, particularly following recurrent hypoglycemia.

Role: Co-I

### Completed Research Support

*R01 DK123083*

*09/15/2020 – 07/31/2026 (NCE)*

Neural circuits coordinating protein intake: Role of FGF21

This project focuses on the neural circuits mediating FGF21-dependent changes in macronutrient selection, particularly the increases in protein intake and preference that occur during dietary protein restriction. Budget \$321,995 (Year 1)

Role: Principal Investigator

*R01 DK121370*

*05/15/2020 - 03/31/2025 (NCE)*

FGF21-dependent mechanisms driving changes in energy expenditure during dietary protein restriction.



PI: Christopher Morrison

*R01 DK081563* 06/01/2010 – 5/30/2015 (NCE to 5/30/2016)

Neural Regulation of Protein Ingestion

Focuses on defining the cellular mechanisms through which amino acids act on hypothalamic neurons to suppress food intake, and whether this amino acid signaling contributes to the regulation of protein intake and macronutrient selection. Budget \$333,000 (Year 1).

PI: Christopher Morrison

*P20 RR021945* 10/25/06 – 05/30/10

Mentoring Obesity and Diabetes Research in Louisiana

An institutional center grant supported through the Center of Biomedical Research Excellence (COBRE) program. The goal is to enhance research in Louisiana on obesity and adult-onset diabetes by recruiting, mentoring, and retaining promising young scientists. Dr. Morrison is the PI of one of the four supported projects. This project specifically focuses on the cellular mechanisms of aging-induced leptin resistance and obesity. Budget \$235,151 (annual).

PI: Thomas Gettys Research Project PI: Christopher Morrison

*R03 NS051570* 07/01/06 - 06/31/09

Hypothalamic Leptin and Insulin Signaling.

Focuses on the overlapping physiological and cellular effects of leptin and insulin within defined brain areas, and potential mechanisms for their common dysregulation during diet-induced obesity. Budget \$147,000.

PI: Christopher Morrison

*PBRC Pilot and Feasibility Award (CNRU Center Grant P30 DK072476); 2009*

Effects of maternal obesity on neural development and obesity.

This project focuses on the effects of maternal obesity and leptin signaling on brain development during the perinatal period and its subsequent impact on obesity predisposition in offspring. Budget \$49,980.

PI: Christopher Morrison

*PBRC Pilot and Feasibility Award (CNRU Center Grant P30 DK072476); 2008*

Maternal dietary fat, independent of obesity, predisposes offspring to obesity.

This pilot project focuses on the independent contributions of maternal obesity versus maternal overconsumption of dietary fat to obesity predisposition in offspring. Budget \$41,160.

PI: Christopher Morrison

## PUBLICATIONS:

Peer-Reviewed Journal Articles (Current H-Index = 52)

- Spann RA, Kim SQ, Khan MSH, Albarado DA, Fernandez-Kim SO, Berthoud HR, McDougal DH, Münzberg H, He Y, Yu S, **Morrison CD**. FGF21 signals through hindbrain neurons to alter food intake and energy expenditure during dietary protein restriction. In Review, Preprint available at: <https://doi.org/10.1101/2025.04.19.649640>
- Godoy-Lugo JG, Young KE, Vaddi P, Batamack Y, Aldridge J, Fernandez-Kim SO, Albarado DC, Burke SJ, Stephens JM, **Morrison CD**, Hill CM. Low protein-induced-FGF-21 signaling remodels adipose tissue on reduced markers of senescence during aging. *Geroscience*, In Press.
- Yang M, de Araujo A, Shakir J, Braga I, Mendez-Hernandez R, Tofani GSS, Bali A, de Lartigue J, Song H, McCutcheon JE, **Morrison CD**, and de Lartigue G. Vagal Sensory Neurons Encode Internal Protein Status to Guide Eating. *Molecular Metabolism*, In Press.
- Banks AS, Allison DB, Alquier T, Ansarullah, Austad SN, Auwerx J, Ayala JE, Baur JA, Carobbio S, Churchill GA, Dall M, de Cabo R, Donato J Jr, Dragano NR, Elias CF, Ferrante AW Jr, Finck BN,

Galgani JE, Gerhart-Hines Z, Goodyear LJ, Grobe JL, Gupta RK, Habegger KM, Hartig SM, Hevener AL, Heymsfield SB, Holman CD, de Angelis MH, James DE, Kazak L, Kim JB, Klingenspor M, Kong X, Kooijman S, Lantier L, Lloyd KCK, Lo JC, Lodhi IJ, MacLean PS, McGuinness OP, Medina-Gómez G, Mirmira RG, **Morrison CD**, Morton GJ, Müller TD, Ogawa Y, Pajuelo-Reguera D, Potthoff MJ, Qi N, Reitman ML, Rensen PCN, Rozman J, Rutkowsky JM, Sakamoto K, Scherer PE, Schwartz GJ, Sedlacek R, Selloum M, Shaikh SR, Chen S, Shulman GI, Škop V, Soukas AA, Speakman JR, Spiegelman BM, Steinberg GR, Svensson KJ, Thyfault JP, Tiganis T, Titchenell PM, Turner N, Velloso LA, Vidal-Puig A, Ward CS, Williams AS, Wolfrum C, Xu AW, Xu Y, Zierath JR; International Indirect Calorimetry Consensus Committee (IICCC). A consensus guide to preclinical indirect calorimetry experiments. *Nat Metab.* 7:1765-1780, 2025.

5. Spann RA, **Morrison CD**, Berthoud HR. Role of protein leverage versus hedonics in overeating and weight gain on palatable diet. *Obesity (Silver Spring)*, 33:1213-1214, 2025.
6. Berthoud HR, Münzberg H, **Morrison CD**, Neuhuber WL. Gut-brain communication: Functional anatomy of vagal afferents. *Curr Opin Neurobiol* 93:103058, 2025
7. Kim SQ, Spann RA, Hill CM, Berryman CE, Berthoud HR, McDougal DH, He Y, Münzberg H, Yu S, **Morrison CD**. Protein-Restricted Diets and Their Impact on Metabolic Health and Aging. *Annu Rev Nutr* 45:269-297, 2025.
8. Khan MSH, Kim SQ, Ross RC, Corpodean F, Spann RA, Albarado DA, Fernandez-Kim SO, Clarke B, Berthoud HR, Münzberg H, McDougal DH, He Y, Yu S, Albaugh VL, Soto PL, **Morrison CD**. FGF21 acts in the brain to drive macronutrient-specific changes in behavioral motivation and brain reward signaling. *Mol Metab.* 91:102068, 2025.
9. Burke SJ, Batdorf HM, Ducote MP, Martin TM, Karlstad MD, Noland RC, Ghosh S, **Morrison CD**, Collier JJ. High-Protein Diet Prevents Glucocorticoid-Induced Fat Mass Accumulation and Hyperglycemia. *Int J Mol Sci.* 26:4212, 2025.
10. Soto PL, Young ME, Nguyen S, Federoff M, Goodson M, **Morrison CD**, Batdorf HM, Burke SJ, Collier JJ. Early adolescent second-generation antipsychotic exposure produces long-term, post-treatment increases in body weight and metabolism-associated gene expression. *Pharmacol Biochem Behav.* 247:173951, 2025.
11. Francois M, Kaiser L, He Y, Xu Y, Salbaum JM, Yu S, **Morrison CD**, Berthoud HR, Münzberg H. Leptin receptor neurons in the dorsomedial hypothalamus require distinct neuronal subsets for thermogenesis and weight loss. *Metabolism* 163:156100, 2025.
12. Münzberg H, Heymsfield SB, Berthoud HR, **Morrison CD**. History and future of leptin: Discovery, regulation and signaling. *Metabolism.* 161:156026. 2024
13. Kim SQ, Spann RA, Khan MSH, Berthoud HR, Münzberg H, Albaugh VL, He Y, McDougal DH, Soto P, Yu S, **Morrison CD**. FGF21 as a mediator of adaptive changes in food intake and macronutrient preference in response to protein restriction. *Neuropharmacology.* 255:110010. 2024.
14. Berthoud HR, Münzberg H, **Morrison CD**, Neuhuber WL. Hepatic interoception in health and disease. *Auton Neurosci.* 253:103174, 2024.
15. Ryu S, Spadaro O, Sidorov S, Lee AH, Caprio S, **Morrison C**, Smith SR, Ravussin E, Shchukina I, Artyomov MN, Youm YH, Dixit VD. Reduction of SPARC protects mice against NLRP3 inflammasome activation and obesity. *J Clin Invest.* 133:e169173, 2023.
16. Ross RC, He Y, Townsend RL, Schauer PR, Berthoud HR, **Morrison CD**, Albaugh VL. The Vagus Nerve Mediates Gut-Brain Response to Duodenal Nutrient Administration. *Am Surg.* 89:3600-3602, 2023.

17. Shah H, Kramer A, Mullins CA, Mattern M, Gannaban RB, Townsend RL, Campagna SR, **Morrison CD**, Berthoud HR, Shin AC. Reduction of Plasma BCAAs following Roux-en-Y Gastric Bypass Surgery Is Primarily Mediated by FGF21. *Nutrients*. 31:1713, 2023. doi: 10.3390/nu15071713.
18. Albaugh VL, He Y, Münzberg H, **Morrison CD**, Yu S, Berthoud HR. Regulation of body weight: Lessons learned from bariatric surgery. *Mol Metab*. 26:101517, 2023.
19. Huesing C, Zhang R, Gummadi S, Lee N, Qualls-Creekmore E, Yu S, **Morrison CD**, Burk D, Berthoud HR, Neuhuber W, Münzberg H. Organization of sympathetic innervation of interscapular brown adipose tissue in the mouse. *J Comp Neurol*. 530:1363-1378, 2022.
20. Wisse LE, Visser D, Ter Braak TJ, Bakkali A, Struys EA, **Morrison CD**, van der Knaap MS, Abbink TEM. Isocaloric low protein diet in a mouse model for vanishing white matter does not impact ISR deregulation in brain, but reveals ISR deregulation in liver. *Nutr Neurosci*. 25:1219-1230, 2022.
21. Torres F, Khan S, Fernandez-Kim SO, Spann R, Albarado D, Wagner TJ, **Morrison CD**, Soto PL. Dynamic effects of dietary protein restriction on body weights, food consumption, and protein preference in C57BL/6J and Fgf21-KO mice. *J Exp Anal Behav*. 117:346-362, 2022.
22. Hill CM, Albarado DC, Coco LG, Spann RA, Khan MS, Qualls-Creekmore E, Burk DH, Burke SJ, Collier JJ, Yu S, McDougal DH, Berthoud HR, Münzberg H, Bartke A, **Morrison CD**. FGF21 is required for protein restriction to extend lifespan and improve metabolic health in male mice. *Nat Commun*. 13:1897, 2022.
23. Owens-French J, Li SB, Francois M, Leigh Townsend R, Daniel M, Soulier H, Turner A, de Lecea L, Münzberg H, **Morrison C**, Qualls-Creekmore E. Lateral hypothalamic galanin neurons are activated by stress and blunt anxiety-like behavior in mice. *Behav Brain Res*. 423:113773, 2022.
24. Spann RA, **Morrison CD**, den Hartigh LJ. The Nuanced Metabolic Functions of Endogenous FGF21 Depend on the Nature of the Stimulus, Tissue Source, and Experimental Model. *Front Endocrinol (Lausanne)*. 12:802541, 2022.
25. Khan MS, Spann RA, Münzberg H, Yu S, Albaugh VL, He Y, Berthoud HR, **Morrison CD**. Protein Appetite at the Interface between Nutrient Sensing and Physiological Homeostasis. *Nutrients*. 13:4103, 2021.
26. Feng B, Harms J, Patel N, Ye H, Luo P, Irizarry VT, Vidrine J, Coulter A, Rebello CJ, Yu S, Fan J, Berthoud HR, Greenway F, Münzberg H, **Morrison C**, Xu P, He Y. Targeting the T-type calcium channel Cav3.2 in GABAergic arcuate nucleus neurons to treat obesity. *Mol Metab*. 54:101391, 2021.
27. DuVall MA, Coulter CE, Gosey JL, Herrera MJ, Hill CM, Jariwala RR, Maisano LE, Moldovan LA, **Morrison CD**, Nwabueze NV, Sikaffy HX, McDougal DH. Leptin treatment prevents impaired hypoglycemic counterregulation induced by exposure to severe caloric restriction or exposure to recurrent hypoglycemia. *Auton Neurosci*. 235:102853, 2021.
28. **Morrison CD**, DuVall MA, Hill CM, Spann RA, McDougal DH. Leptin receptor signaling is required for intact hypoglycemic counterregulation: A study in male Zucker rats. *J Diabetes Complications*. 35:107994, 2021.
29. Berthoud HR, **Morrison CD**, Ackroff K, Sclafani A. Learning of food preferences: mechanisms and implications for obesity & metabolic diseases. *Int J Obes (Lond)*. 45:2156-2168, 2021.

30. Fang H, Ghosh S, Sims L, Stone KP, Hill CM, Spires DR, Ilatovskaya DV, **Morrison CD**, Gettys T, Stadler K. FGF21 prevents low protein diet-induced renal inflammation in aged mice. *Am J Physiol Renal Physiol*. 321:F356-F368. 2021.
31. Faramia J, Hao Z, Mumphrey MB, Townsend RL, Miard S, Carreau AM, Nadeau M, Frisch F, Baraboi ED, Grenier-Larouche T, Noll C, Li M, Biertho L, Marceau S, Hould FS, Lebel S, **Morrison CD**, Münzberg H, Richard D, Carpentier AC, Tchernof A, Berthoud HR, Picard F. IGFBP-2 partly mediates the early metabolic improvements caused by bariatric surgery. *Cell Rep Med*. 2(4):100248, 2021.
32. Jonsson WO, Margolies NS, Mirek ET, Zhang Q, Linden MA, Hill CM, Link C, Bithi N, Zalma B, Levy JL, Pettit AP, Miller JW, Hine C, **Morrison CD**, Gettys TW, Miller BF, Hamilton KL, Wek RC, Anthony TG. Physiologic Responses to Dietary Sulfur Amino Acid Restriction in Mice Are Influenced by Atf4 Status and Biological Sex. *J Nutr*. 151:785-799, 2021.
33. Huesing C, Qualls-Creekmore E, Lee N, François M, Torres H, Zhang R, Burk DH, Yu S, **Morrison CD**, Berthoud HR, Neuhuber W, Münzberg H. Sympathetic innervation of inguinal white adipose tissue in the mouse. *J Comp Neurol*. 529:1465-1485, 2021
34. Wisse LE, Visser D, Ter Braak TJ, Bakkali A, Struys EA, **Morrison CD**, van der Knaap MS, Abbink TEM. Isocaloric low protein diet in a mouse model for vanishing white matter does not impact ISR deregulation in brain, but reveals ISR deregulation in liver. *Nutr Neurosci*. 25:1-12, 2020
35. Qualls-Creekmore E, Marlatt KL, Aarts E, Bruce-Keller A, Church TS, Clément K, Fisher JO, Gordon-Larsen P, **Morrison CD**, Raybould HE, Ryan DH, Schauer PR, Spector AC, Spetter MS, Stuber GD, Berthoud HR, Ravussin E. What Should I Eat and Why? The Environmental, Genetic, and Behavioral Determinants of Food Choice: Summary from a Pennington Scientific Symposium. *Obesity (Silver Spring)*. 28:1386-1396, 2020.
36. Hill CM, Qualls-Creekmore E, Berthoud HR, Soto P, Yu S, McDougal DH, Münzberg H, and **Morrison CD**. FGF21 and the physiological regulation of macronutrient preference. *Endocrinology* 161:bqaa019, 2020.
37. Münzberg H, Singh P, Heymsfield SB, Yu S, **Morrison CD**. Recent advances in understanding the role of leptin in energy homeostasis. *F1000Res* 9:F1000 Faculty Rev-451, 2020.
38. Berthoud HR, **Morrison CD**, Münzberg H. The obesity epidemic in the face of homeostatic body weight regulation: What went wrong and how can it be fixed? *Physiol Behav*. 222:112959, 2020
39. **Morrison CD**, Hill CM, DuVall MA, Coulter CE, Gosey JL, Herrera MJ, Maisano LE, Sikaffy HX, McDougal DH. Consuming a ketogenic diet leads to altered hypoglycemic counter-regulation in mice. *J Diabetes Complications*. 34:107557, 2020.
40. François M, Torres H, Huesing C, Zhang R, Saurage C, Lee N, Qualls-Creekmore E, Yu S, **Morrison CD**, Burk D, Berthoud HR, Münzberg H. Sympathetic innervation of the interscapular brown adipose tissue in mouse. *Ann N Y Acad Sci*. 1454:3-13, 2019.
41. McNulty MA, Goupil BA, Albarado DC, Castaño-Martinez T, Ambrosi TH, Puh S, Schulz TJ, Schürmann A, **Morrison CD**, Laeger T. FGF21, not GCN2, influences bone morphology due to dietary protein restrictions. *Bone Reports* 12:100241, 2019.
42. Huang TY, Goldsmith FR, Fuller SE, Simon J, Batdorf HM, Scott MC, Essajee NM, Brown JM, Burk DH, **Morrison CD**, Burke SJ, Collier JJ, Noland RC. Response of Liver Metabolic Pathways to Ketogenic Diet and Exercise Are Not Additive. *Med Sci Sports Exerc*. 252:37-48, 2020.

43. Hill CM, **Morrison CD**. The Protein Leverage Hypothesis: A 2019 Update for Obesity. *Obesity* (Silver Spring), 27(8):1221, 2019.
44. Boland BB, Mumphrey MB, Hao Z, Townsend RL, Gill B, Oldham S, Will S, **Morrison CD**, Yu S, Münzberg H, Rhodes CJ, Trevaskis JL, Berthoud HR. Combined loss of GLP-1R and Y2R does not alter progression of high-fat diet-induced obesity or response to RYGB surgery in mice. *Mol Metab*. 25:64-72, 2019.
45. Hill CM, Laeger T, Dehner M, Albarado DC, Clarke B, Wanders D, Burke SJ, Collier JJ, Qualls-Creekmore E, Solon-Biet SM, Simpson SJ, Berthoud HR, Münzberg H, **Morrison CD**. FGF21 Signals Protein Status to the Brain and Adaptively Regulates Food Choice and Metabolism. *Cell Rep*. 27(10):2934-2947, 2019.
46. Mumphrey MB, Hao Z, Leigh Townsend R, Qualls-Creekmore E, Yu S, Lutz TA, Münzberg H, **Morrison CD**, Berthoud HR. Gastric bypass surgery in lean adolescent mice prevents diet-induced obesity later in life. *Sci Rep*. 9(1):7881, 2019.
47. Allard C, Bonnet F, Xu B, Coons L, Albarado D, Hill C, Fagherazzi G, Korach KS, Levin ER, Lefante J, **Morrison C**, Mauvais-Jarvis F. Activation of hepatic estrogen receptor- $\alpha$  increases energy expenditure by stimulating the production of fibroblast growth factor 21 in female mice. *Mol Metab* 22:62-70, 2019.
48. Boland B, Mumphrey MB, Hao Z, Gill B, Townsend RL, Yu S, Münzberg H, **Morrison CD**, Trevaskis JL, Berthoud HR. The PYY/Y2R-Deficient Mouse Responds Normally to High-Fat Diet and Gastric Bypass Surgery. *Nutrients*. 11: 585, 2019.
49. McDougal DH, Darpolor MM, DuVall MA, Sutton EF, **Morrison CD**, Gadde KM, Redman LM, Carmichael OT. Glial acetate metabolism is increased following a 72-h fast in metabolically healthy men and correlates with susceptibility to hypoglycemia. *Acta Diabetol*. 55:1029-1036, 2018.
50. Hill CM, Berthoud HR, Münzberg H, **Morrison CD**. Homeostatic sensing of dietary protein restriction: A case for FGF21. *Front Neuroendocrinol*. 51:125-131, 2018.
51. Hao Z, Leigh Townsend R, Mumphrey MB, Gettys TW, Yu S, Münzberg H, **Morrison CD**, Berthoud HR. Roux-en-Y Gastric Bypass Surgery-Induced Weight Loss and Metabolic Improvements Are Similar in TGR5-Deficient and Wildtype Mice. *Obes Surg*. 28:3227-3236, 2018.
52. Sutton EF, **Morrison CD**, Stephens JM, Redman LM. Fibroblast growth factor 21, adiposity, and macronutrient balance in a healthy, pregnant population with overweight and obesity. *Endocr Res* 16:1-9, 2018.
53. Yu S, Cheng H, François M, Qualls-Creekmore E, Huesing C, He Y, Jiang Y, Gao H, Xu Y, Zsombok A, Derbenev AV, Nillni EA, Burk DH, **Morrison CD**, Berthoud HR, Münzberg H. Preoptic leptin signaling modulates energy balance independent of body temperature regulation. *Elife*. 7: e33505, 2018.
54. Hill CM, **Morrison CD**. Dietary branched chain amino acids and metabolic health: when less is more. *J Physiol*. 596:555-556, 2018.
55. Hill CM, Laeger T, Albarado DC, McDougal DH, Berthoud HR, Münzberg H, and **Morrison CD**. Low protein-induced increases in FGF21 drive UCP1-dependent metabolic but not thermoregulatory endpoints. *Scientific Reports* 7:8209, 2017.
56. Hao Z, Townsend RL, Mumphrey MB, **Morrison CD**, Münzberg H, Berthoud HR. RYGB Produces more Sustained Body Weight Loss and Improvement of Glycemic Control Compared with VSG in the Diet-Induced Obese Mouse Model. *Obes Surg*, 27:2424-2433, 2017.

57. Berthoud HR, Münzberg H, **Morrison CD**. Blaming the Brain for Obesity: Integration of Hedonic and Homeostatic Mechanisms. *Gastroenterology*.152:1728-1738, 2017.
58. Qualls-Creekmore E, Yu S, Francois M, Hoang J, Huesing C, Bruce-Keller A, Burk D, Berthoud HR, **Morrison CD**, Münzberg H. Galanin-Expressing GABA Neurons in the Lateral Hypothalamus Modulate Food Reward and Noncompulsive Locomotion. *J Neurosci*. 37:6053-6065, 2017.
59. Aboualizadeh E, Carmichael OT, He P, Albarado DC, **Morrison CD**, Hirschmugl CJ. Quantifying Biochemical Alterations in Brown and Subcutaneous White Adipose Tissues of Mice Using Fourier Transform Infrared Widefield Imaging. *Front Endocrinol (Lausanne)*. 8:121, 2017.
60. **CD Morrison**, Z Hao, MB. Mumphrey, RL Townsend, He Münzberg, J Ye, HR Berthoud. Roux-en-Y gastric bypass surgery is effective in fibroblast growth factor-21 deficient mice. *Molecular Metabolism*, 5:1006-14, 2016.
61. T Laeger, DC Albarado, SJ Burke, L Trosclair, JW Hedgepeth, HR Berthoud, TW Gettys, JJ Collier, H Münzberg, and **CD Morrison**. Metabolic responses to dietary protein restriction require an increase in FGF21 that is delayed by the absence of GCN2. *Cell Reports* 16:707-716, 2016.
62. SM Solon-Biet, VC Cogger, M Heblinski, T Pulpitel, D Wahl, AC McMahon, A Warren, J Durrant-Whyte, KA Walters, F Ponton, K Ruohonen, A Conigrave, D James, D Raubenheimer, **CD Morrison**, DG Le Couteur, SJ Simpson. Defining the nutritional and metabolic context of FGF21 using the Geometric Framework. *Cell Metabolism, Cell Metab*. 24:555-565. 2016.
63. Hao Z, Mumphrey MB, **Morrison CD**, Münzberg H, Ye J, Berthoud HR. Does gastric bypass surgery change body weight set point? *Int J Obes Suppl*. 6:S37-S43, 2016.
64. AK Gosby, NS Lau, CS Tam, MA Iglesias, **CD Morrison**, ID Caterson, J Brand-Miller, AD Conigrave, D Raubenheimer, SJ Simpson. Raised FGF-21 and triglycerides accompany increased energy intake driven by protein leverage in lean, healthy individuals: a randomised trial. *PLoS One* 11:e0161003, 2016.
65. Z Hao, MB Mumphrey, RL Townsend, **CD Morrison**, H Münzberg, J Ye, HR Berthoud. Body Composition, Food Intake, and Energy Expenditure in a Murine Model of Roux-en-Y Gastric Bypass Surgery. *Obesity Surgery* 26:2173-82, 2016.
66. TM Henagan, T Laeger, AM Navard, D Albarado, RC Noland, K Stadler, CM Elks, D Burke, **CD Morrison**. Hepatic autophagy contributes to the metabolic response to dietary protein restriction. *Metabolism* 65:805-815, 2016.
67. S Yu, E Qualls-Creekmore, K Rezai-Zadeh, Y Jiang, HR Berthoud, **CD Morrison**, A Derbenev, A Zsombok, and H Münzberg. Glutamatergic preoptic area neurons that express leptin receptors drive temperature-dependent body weight homeostasis. *Journal of Neuroscience*, 36:5034-46, 2016.
68. MB Mumphrey, Z Hao, RL Townsend, LM Patterson, H Münzberg, **CD Morrison**, J Ye, HR Berthoud. Eating in mice with gastric bypass surgery causes exaggerated activation of brainstem anorexia circuit. *Int J Obes*. 40:921-8, 2016.
69. Z Hao, MB Mumphrey, RL Townsend, **CD Morrison**, H Münzberg, J Ye, HR Berthoud. Reprogramming of defended body weight after Roux-En-Y gastric bypass surgery in diet-induced obese mice. *Obesity (Silver Spring)* 24:654-60, 2016.
70. H Münzberg, E Qualls-Creekmore, HR Berthoud, **CD Morrison**, S Yu. Neural Control of Energy Expenditure. *Handb Exp Pharmacol*. 233:173-94, 2016.

71. H Münzberg, E Qualls-Creekmore, S Yu, **CD Morrison**, HR Berthoud. Hedonics Act in Unison with the Homeostatic System to Unconsciously Control Body Weight. *Front Nutr.* 3:6, 2016.
72. A Laque, S Yu, E Qualls-Creekmore, S Gettys, C Schwartzburg, K Bui, C Rhodes, HR Berthoud, **CD Morrison**, B Richards, H Münzberg. Leptin modulates nutrient reward via inhibitory galanin action on orexin neurons. *Molecular Metabolism* 16:706-7017, 2015.
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#### Books and Book Chapters

1. **CD Morrison**. Physical Activity and Hypothalamic Peptides. *Physical Activity and Obesity*, edited by C Bouchard and PT Katzmarzyk, 2010.
2. H Münzberg H, **CD Morrison**, JM Salbaum. Small Animal Models of Obesity. Chapter 17, *Handbook of Obesity*, 5<sup>th</sup> Edition, edited by GA Bray and C Bouchard, 2024.

#### Abstracts

1. Spann RA, Khan MSH, Kim SQ, Albarado DA, Fernandez-Kim SO, Yu S, Muenzberg H, **Morrison CD**. The Thermogenic Effect Of Fgf21 Signaling Is Mediated By Both Brown And Beige Adipose Tissue Activation. Society for the Study of Ingestive Behavior, July 2024.
2. Khan MS, Spann RA, Fernandez-Kim SA, Albarado DA, Pablico S, Torres F, Soto PL, Yu S, and **Morrison CD**. The Effect of Fasting on the Macronutrient Preference Shift in Protein-Restricted Mice. The Obesity Society/Obesity Week, October 2023.
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8. **Morrison CD**. FGF21 is an essential endocrine signal for the sensing of dietary protein restriction. Society for the Study of Ingestive Behavior, July 2018.
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11. Hill CM, Laeger T, Albarado DC, McDougal DH, Berthoud HR, Münzberg H, and **Morrison CD**. Dietary Low Protein-Induced FGF21 Regulates UCP1-Dependent Metabolic but Not Thermoregulatory Endpoints. Society for the Study of Ingestive Behavior, July 2017.
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22. **CD Morrison**. Neurobiology of energy and protein intake: Implications for obesity and metabolism. AAVN Clinical Nutrition and Research Symposium, May 2012.
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## INVITED TALKS AND LECTURES

Brain-Body Communication and Metabolic Diseases – PBRC Scientific Symposium, December 2025  
 BrainLink X-Lab Day – Incheon, South Korea, November 2025  
 Periprandial Mechanisms - Ascona Conference 2024 – September 2024  
 University of Southern California, Leonard Davis School of Gerontology – September 2023  
 Endocrine Society Annual Meeting – June 2023  
 Tulane National Primate Research Center – October 2022  
 Gut-brain communication in metabolic control and the regulation of energy homeostasis – Ascona Conference 2022 - July 2022  
 Diabetes, Obesity, and Cardiovascular Disease Virtual Summit – September 2021  
 The American Diabetes Association Scientific Sessions – June 2021  
 The Obesity Society Annual Meeting, Obesity Week - November 2020  
 Rutgers University, Department of Department of Nutritional Sciences – March 2020  
 American Society of Nutrition Annual Meeting – June 2019  
 Keystone Symposia, Functional Neurocircuitry of Feeding and Feeding Disorders, February 2019  
 Pennington Biomedical Research Center Scientific Symposium: What should I eat and why? The Environmental, Genetic, and Behavioral Determinants of Food Choice. December, 2018  
 University of Mississippi Medical Center, September 2018  
 Society for the Study of Ingestive Behavior Annual Meeting, July 2018  
 University of Wisconsin – Platteville, Department of Animal Science, April 2018  
 Purdue University, Department of Nutrition Science, December 2016  
 Saint Louis University School of Medicine, Department of Pharmacology & Physiology, May 2016  
 Obesity Week/TOS Annual Meeting, November 2015  
 ADSA – ASAS Joint Annual Meeting, Symposium Speaker, July 2015.  
 American Diabetes Association Annual Meeting, Symposium Speaker, June 2015.  
 University of Washington Diabetes and Metabolism Seminar Series, October 22, 2014.

FASEB Science Research Conferences, Nutrient Sensing and Metabolic Signaling. Big Sky, MT. August 14, 2014.

Endocrine Society Annual Meeting (ICE/ENDO 2014). Chicago, IL. June 21, 2014

Tulane University Neuroscience Seminar Series, New Orleans, LA. February, 2014

Society for the Study of Ingestive Behavior Annual Meeting. Zurich, Switzerland, July 2012

Keynote Speaker, American Academy of Veterinary Nutrition Annual Meeting. New Orleans, LA, May 2012

Presidential Symposium – Society for the Study of Ingestive Behavior Annual Meeting. Steamboat Springs, CO. July 2007

## **SERVICE:**

### **Journal Editor**

Obesity (Associate Editor; 2013-2022)

PLoS ONE (Academic Editor; 2011-2012)

### **Editorial Boards**

American Journal of Physiology: Endocrinology and Metabolism (2008 to 2017)

Endocrinology (2011-2012)

### **Ad Hoc Manuscript Reviewer**

American Journal of Clinical Nutrition

American Journal of Physiology: Endocrinology and Metabolism

American Journal of Physiology: Regulatory

Appetite

Biochem Biophys Acta

Behavioral Brain Research

Cell Reports

Cell Metabolism

Diabetes

eLife

Endocrinology

FASEB Journal

FEBS Letters

Gastroenterology

International Journal of Obesity

Journal of Animal Science

Journal of Clinical Investigation

Journal of Diabetic Complications

Journal of Endocrinology

Journal of Molecular Endocrinology

Journal of Neuroendocrinology

Journal of Nutrition

Journal of Physiology

Molecular Metabolism

Molecular Neurobiology

Nature Communications

Nature Metabolism

Neonatology

Neuroscience Letters

Obesity

Obesity Reviews

Peptides

Physiology and Behavior

PLoS One

PLoS Genetics

Plos Biology  
 Proceedings of the National Academy of Science  
 Regulatory Peptides  
 Rejuvenation Research  
 Scientific Reports

## Committee Assignments

### *Institution*

PBRC IACUC	2003-2014
PBRC Crisis Leave Committee	2011-2013
PBRC Faculty Advisory Council	2012-2017
PBRC Speakers Committee	2013-2019
PBRC Library Committee	2013-2018
PBRC Faculty Advisory Council (Chair)	2019-2020
PBRC Promotion and Tenure Committee	2019-2020
PBRC Grant and Funding Task Force	2020-2022
PBRC COBRE Internal Advisory	2011-Current
PBRC NORC Executive Committee	2015-Current
PBRC Obesity T32 Steering Committee	2018-Current
PBRC Executive Committee	2021-Current
PBRC Management Committee	2021-Current
PBRC Animal Care and Use Committee (Institutional Official)	2021-Current
PBRC Biological Safety Committee (Institutional Official)	2021-Current

### *LSU System/Board of Regents*

Louisiana Board of Regents Advisory Committee for the Advancement of Research in Louisiana	2021-Current
Louisiana Board of Regents EPSCoR Committee	2021-Current

### *National Societies*

SSIB Finance Committee	2024-Current
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## Grant Reviewing

### *National Institutes of Health*

#### *Regular Member*

Neurobiology, Neuroimmunology, Rhythms and Sleep Study Section Regular Member;  
 July 1, 2014 – June 20, 2018 (3 meetings per year)

#### *Ad hoc*

Neurobiology of Motivated Behavior Study Section, Feb 2013  
 Neurobiology, Neuroimmunology, Rhythms and Sleep Study Section, May 2013  
 Integrative Neuroscience ZRG1 IFCN-Z (02), January 2014  
 Nutrigenetics & Nutrigenomics Approaches for Nutrition Research, ZRG1 EMNR-Q-50, July 2014  
 Shared Instrumentation (S10) SEP ZRG1 IMST-D, November 2019.  
 Fellowships: Endocrinology, Metabolism, Nutrition and Reproductive Sciences - F06, November 2020.  
 Pathophysiology of Obesity and Metabolic Disease Study Section, June 2022.  
 Cellular Mechanisms of Aging and Development Study Section, February 2024

### *Other*

Department of Veteran Affairs, Rehabilitation Research & Development, Chronic Pain and Obesity Merit Review. March 2006.  
 Univ. of Michigan Diabetes Research Training Center Pilot Program - October 2007.  
 LSU Agricultural Experiment Station - August 2007.

Diabetes UK – Project Grant – March 2009  
 American Diabetes Association – Research Award – March 2009  
 PBRC Botanical Center Pilot and Feasibility Program – May 2009  
 Michigan Metabolomics and Obesity Center – August 2009  
 Singapore National Medical Research Council – January 2010  
 Univ. of Washington Diabetes and Endocrinology Research Center – March 2010  
 Diabetes UK – Project Grant – March 2010  
 PBRC Nutrition Obesity Research Center Pilot and Feasibility Program – March 2011  
 Diabetes UK – Project Grant – Jan 2012  
 Biotechnology and Biological Sciences Research Council (UK) – November 2012  
 Medical Research Council Grant Program (UK) – March 2013  
 PBRC Botanical Research Center – August 2013  
 LaCATS Pilot Award Program – June 2014  
 LaCATS Pilot Award Program – April 2015  
 LaCATS Pilot Award Program – April 2016  
 Biotechnology and Biological Sciences Research Council (UK) July 2016  
 PBRC NORC Pilot Award Program – August 2016  
 MMPC MicroMouse Program – April 2017  
 Biotechnology and Biological Sciences Research Council (UK) July 2017  
 MMPC MicroMouse Program – October 2017  
 Lundbeck Foundation – August 2019  
 PBRC/LA NORC Pilot and Feasibility Program – June 2021  
 PBRC/LA NORC Pilot and Feasibility Program – June 2022  
 PBRC LAUNCHED Pilot and Feasibility Program – January 2023

## **TEACHING AND MENTORING:**

### **Courses Taught**

Guest Lecturer – HUEC 7004: Molecular and Clinical Nutrition 1 – Fall 2008  
 HUEC 7011: Current Advances in Food and Nutrition – Spring 2009  
 HUEC 7004: Molecular and Clinical Nutrition 1 – Fall 2009  
 HUEC 7004: Molecular and Clinical Nutrition 1 – Fall 2011  
 HUEC 7004: Molecular and Clinical Nutrition 1 – Fall 2013  
 HUEC 7004: Molecular and Clinical Nutrition 1 – Fall 2015  
 NFS 7004: Molecular and Clinical Nutrition 1 – Fall 2017  
 NFS 7004: Molecular and Clinical Nutrition 1 – Fall 2019  
 NFS 7004: Molecular and Clinical Nutrition 1 – Fall 2021  
 NFS 7004: Molecular and Clinical Nutrition 1 – Fall 2023  
 NFS 7004: Molecular and Clinical Nutrition 1 – Fall 2025

### **Junior Faculty Mentoring**

#### Current

Sangho Yu: Primary Mentor  
 David McDougal: Mentoring Committee  
 Ifechukwude Biose: LAUNCHED Mentor

#### Previous

Yanlin He: Mentoring Committee  
 John Apolzan: Mentoring Committee  
 Emily Qualls-Creekmore: Primary Mentor  
 Courtney Peterson: Mentoring Committee  
 Desiree Wanders: COBRE Faculty Mentor  
 Sangho Yu: COBRE Faculty Mentor

## **Postdoctoral Mentoring**

### Current

Sora Kim – Primary Mentor (2023)  
 Redin Spann – Primary Mentor (2020)

### Previous

Md Shahjalal Khan – Primary Mentor, 2021-2023  
 Cristal M. Hill – Primary Mentor, 2016-2022  
 Sean Swetledge – Secondary Mentor for F32  
 Emily Qualls-Creekmore - Secondary Mentor for T32  
 Thomas Laeger – Primary Mentor, 2013-2015  
 Tara Henagan - Primary Mentor, 2011-2013  
 Scott Reed – Primary Mentor, 2011-2012  
 Molly R. Matthews-Ewald - Secondary Mentor for T32  
 Andrew Shin – Secondary Mentor for T32

## **Graduate Advisement and Research**

Laura Kaiser – PhD Committee, LSU Biological Sciences, Dr. Heike Muenzberg, Major Professor  
 Thomas Wagner – PhD Candidate. Mentoring Committee, LSU Department of Psychology, Dr. Paul Soto, Major Professor  
 Shantavia Hayes – Primary Mentor, 2018 LSU Vet School Summer Scholars Program  
 Rizaldy Zapata - PhD Candidate. University of Calgary. Prasanth Chelikani, Major Professor  
 Elizabeth Frost Sutton – Mentor on funded F31 project  
 Denise McNamara – PhD Candidate. Department of Animal Sciences, University of Missouri-Columbia. Dr. Duane Keisler, Major Professor

## **Undergraduate Advisement and Research**

Kenny Ballard, Bhavani Krishnan, Casey Honigman, Jessica Davidson, Anne-Victoria Traylor, Madeleine Dehner, Lucia Coco, Eve Gautreaux, Anna Feemster, Anna Quinn Billeaud (LSU Psychology Research Project)  
 Louisiana Biomedical Research Network Summer Research Intern  
 Louis Sakwe 2009, Erin Harris 2010