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I. EDUCATION

A. Degrees and Training

1. Postdoctoral Fellow, Diabetes/Islet Biology, Duke University Medical Center, Durham, North Carolina, 2007-2013
2. Ph.D., Molecular Biology Program, Biochemistry Department, University of Colorado Health Sciences Center, Denver, Colorado, 2001-2007
 - **DISSERTATION-** “Macrophage mediated prevention of islet loss and diabetes during pancreatitis”
 - The studies comprising my dissertation explored the role of macrophages in preventing beta cell loss during chronic pancreatitis. We demonstrated that macrophages were essential for this process, that the macrophages presented a M2 like phenotype consisting of tissue regeneration and extra cellular matrix remodeling, and that beta cell mass was maintained through the maintenance and expansion of islet vasculature.
3. B.Sc., Microbiology, Brigham Young University, Provo, Utah, 2001

B. Professional Courses

1. Scientist Center for Animal Welfare-Winter Course. December 5-6, 2022
2. The Jackson Laboratory-Workshop on Surgical Techniques in the Laboratory Mouse. September 20-23, 2021
3. University of North Carolina-NGx: A short course on nutrigenetics, nutrigenomics and precision health. June 3-6, 2019

II. PROFESSIONAL REFERENCES

1. Dr. Phillip White, PhD, Assistant Professor, Duke University School of Medicine, Phone: 919 479 2325, Email: phillip.white@duke.edu
2. Dr. Ronadip Banerjee, MD/PhD, Assistant Professor, Johns Hopkins University School of Medicine, Phone: 410-550-9933, Email: rrbanerjee@jhmi.edu
3. Dr. Jason Collier, PhD, Associate Professor, Louisiana State University Pennington Biomedical Research Institute, Phone: 225-763-2884, Email: Jason.Collier@pbrc.edu
4. Dr. Scott Soleimanpour, MD, Associate Professor, University of Michigan School of Medicine, Phone: 626-218-0620, Email: ssol@med.umich.edu
5. Dr. Andrew Neilson, PhD, Associate Professor, North Carolina State University, Phone: 704-250-5495, Email: aneilso@ncsu.edu

III. POSITIONS

1. Brigham Young University, Provo, UT Associate Professor, Department of Microbiology and Molecular Biology, 06/24-Present
2. University of Utah, Salt Lake City, UT, Diabetes and Metabolism Research Center Member, 02/20-Present
3. Brigham Young University, Provo, UT Associate Professor, Department of Nutrition, Dietetics and Food Science, 08/19-6/24
4. Roseman University of Health Sciences, South Jordan, UT, Adjunct Professor, Department of Dentistry, 06/19-12/19
5. Brigham Young University, Provo, UT Assistant Professor, Department of Nutrition, Dietetics and Food Science, 08/13-08/19
6. Elon University, Elon, NC, Adjunct Assistant Professor, Department of Biology, 08/2012-07/2013
7. Alamance Community College, Alamance, NC, Adjunct Assistant Professor, Department of Biology, 08/2011-08/2012
8. North Carolina Central University, Durham, NC, Adjunct Assistant Professor, Department of Biology, 08/2010-08/2011
9. American Journal Experts, Durham, NC, Contract copy editor, content editor and Portuguese translator, 08/2008-08/2013
10. University of Colorado, Health Sciences Center, Denver, CO, Graduate teaching assistant, Biomedical Core Courses, 08/2005-08/2007

IV. AWARDS, HONORS AND RECOGNITION

A. Faculty

1. Permanent Member, National Institute of Health, National Institute of Diabetes and Digestive and Kidney Diseases, Diabetes, Endocrinology, and Metabolic Diseases B (DDK-B) Study Section, 2024-Present
2. Sigma Xi member, 2023
3. BYU Life Science College Outstanding Research Award, 2022
4. BYU Life Science College Skaggs Distinguished Mentoring Fellowship, 2020-2023
5. Diabetes Action Research and Education Foundation Medical Advisory Board Member, 2019-present
6. JDRF Rocky Mountain Chapter Board of Chancellors, 2017-present
7. JDRF Rocky Mountain Chapter Utah Valley Leadership Council, 2013-2017
8. JDRF Rocky Mountain Chapter Hope of the Future Award, 2016-2017
9. NIH Early Career Reviewer, 2016-2018
10. BYU Diabetes Research Laboratory, Assistant Director, 2016-2020

B. Postdoctoral

1. ADA/Takeda Postdoctoral Fellowship Recipient, 2010-2012
2. JDRF Postdoctoral Fellowship Recipient, 2008-2010
3. Beta Cell Biology Consortium Investigator Retreat Scholarship, 2011
4. Keystone Symposia Scholarship NIDDK Scholarship "Islet Biology", 2010
5. Keystone Symposia Scholarship NIDDK Scholarship "Type 2 Diabetes", 2009
6. Project SEED mentor (Lanair Lett), 2009-2010
7. Siemens Competition Mentor, 2009-2010

8. Intel Competition Mentor, 2009-2010

C. Graduate School

1. Keystone Symposia Scholarship NIAID Scholarship “The Macrophage: Homeostasis, Immunoregulation and Disease”, 2007
2. Victor and Earleen Bolie Molecular Biology Scholarship, 2007
3. Western Regional Islet Study Group Travel Grant, 2006
4. Victor and Earleen Bolie Molecular Biology Scholarship, 2006
5. ARCS Member Scholarship, 2006
6. ARCS Member Scholarship, 2005
7. ARCS Light Scholarship, 2004
8. NIH Training Grant Recipient, University of Colorado Health Sciences Center, 2002-2004
9. Molecular Biology Program Recruitment and Admission committee, 2002-2007
10. Graduate Merit Fellowship, 2001

D. Undergraduate

1. Blair Johns Scholarship, 2000
2. J. George Jones Scholarship, 2000
3. Utah Centennial Opportunity Program grant, 2000
4. Office of Research and Creative Activities Award, 2000
5. Continuing student spring/summer scholarship, 1998, 1999, 2000
6. Half Tuition Scholarship, Brigham Young University, 1994-1995

V. TEACHING

A. Courses taught at University and College

BRIGHAM YOUNG UNIVERSITY-

Didactic courses

1. MMBIO 240-Molecular Biology: 2025-present
2. CELL 570-Responsible Research Conduct: 2025-present
3. MMBIO 121-General Biology: Health and Disease: 2025-present
4. MMBIO 661: Molecular Genetics in Practice: 2025-present
5. NDFS 333-Nutrigenetics and Nutrigenomics: 2020-2024
6. NDFS 434-Nutritional Bio-organic chemistry: 2016 – 2019
7. NDFS 435-Nutritional Biochemistry and Metabolism: 2014 – 2024
8. NDFS 601-Advanced Human Nutrition 1-macronutrients: 2019 – 2024
9. NDFS 602-Advanced Human Nutrition 2-micronutrients: 2016 – 2024

10. NDFS 631R-Selected topics: 2015-present

Non-didactic courses (R-course)

1. MMBio 692R-Research in Progress:2024-present
2. MMBIO 494R-Undergraduate Research in MMBIO: 2024-Present
3. NDFS 399R-Academic Internship in NDFS: 2013-2024
4. NDFS 494R-Undergraduate Research in NDFS: 2013 – 2024
5. NDFS 691R-Graduate Seminar: 2019-2024
6. NDFS 697R-Research: 2018-2024

ROSEMAN UNIVERSITY-

1. DMD 5241 Cellular Metabolism and Adaptation 1: 2019

ELON UNIVERSITY-

1. Bio 212 Population Biology and Evolutionary Biology, 2012-2013
2. Bio 111 Introductory Cell Biology, 2013
3. Bio 113 Molecular Biology Laboratory, 2013

ALAMANCE COMMUNITY COLLEGE-

1. Bio 175 Microbiology for pre-nursing, 2011-2012

NORTH CAROLINA CENTRAL UNIVERSITY-

1. Biol 1300 Molecular and Cellular Function, 2010-2011

B. Graduate Student Committees

1. 2025-Present: Nathan Walker (Ph.D. Student).
2. 2024-Present: Miranda Sharp (Masters Student).
3. 2022-Present: Sakhawat Ali (Ph.D. Student). Title: PAS kinase directly phosphorylates and inhibits NAD kinase, slowing growth and proliferation. Degree granting department: Molecular and Microbiology Department.
4. 2021-2024: Spencer Ellsworth (Masters Student). Title: Identification of proteins interacting with the yeast metabolic transcriptional regulator Cbf1. Degree granting department: Molecular and Microbiology Department.
5. 2019-2022: Kathryn Racine (Ph.D. Student), Title: Protective Effects of Cocoa Flavanols Against Obesity and Type 2 Diabetes are Influenced by Biological Sex and Host Gut

- Microbiome Composition. Degree granting department: Department of Food, Bioprocessing and Nutrition Science, North Carolina State University.
6. 2019-2023: Jackie Crabtree (Masters Student). Title: Role of Mef2d in beta cell function. Degree granting department: Nutrition, Dietetics and Food Science Department.
 7. 2018-2021: Emily Orton Krueger (Masters Student). Title: The beneficial effects of the Gut-derived Metabolite Trimethylamine N-oxide on Functional beta cell mass. Degree granting department: Nutrition, Dietetics and Food Science Department.
 8. 2018-2021: Daniel Poole (Ph.D. Student). Changed project and was removed from committee. Degree granting department: Chemistry and Biochemistry Department.
 9. 2018-2021: Jonard Valdoz (Ph.D. Student) Changed project and was removed from committee. Degree granting department: Chemistry and Biochemistry Department.
 10. 2017-2019: Brooke Roark (Masters Student). Title: PAS Kinase and Tor, Controllers of Cell Growth and Proliferation. Degree granting department: Molecular and Microbiology Department.
 11. 2017-2024: Jacob Herring (Ph.D. Student). Title: Role of Nr4a1 in beta cell insulin secretion. Degree granting department: Molecular and Microbiology Department.
 12. 2015-17: Tommy Rowley (Masters Student, Committee Chair – Nutrition, Dietetics and Food Science Department)
 13. 2015-17: Daniel Tueller (Masters Student, Committee Member – Nutrition, Dietetics and Food Science Department)
 14. 2015-17: Jordan Finnell (Masters Student, Committee Member – Biochemistry Department)
 15. 2015-16: Carrie Draney (Masters Student, Committee Chair – Nutrition, Dietetics and Food Science Department)

C. Undergraduate Honors Thesis Committees

1. 2020: Idongesit Ekpo, Title: Building an INS-1 cDNA Library for a Genome-Wide Cas9 Screen can Help Identify Genes Required for Beta-Cell Survival of Metabolic Stressors.
2. 2019: Shannon Barham, Title: Program coordinators' experiences with introducing parent-focused health lessons to a child-centered micronutrient supplementation program: An exploration of recent programmatic changes in Liahona Children's Foundation.
3. 2018: Robert Drury, Title: College Students' Understandings of, Perceptions Towards, and Usage of Canned Foods Based on Exposure to Canned Foods During Childhood.
4. 2016: Jason Ray, Title: Nkx6.1-mediated insulin secretion and Beta cell proliferation is dependent on upregulation of c-Fos.

D. Undergraduate Students Mentored in MMBIO 494R Undergraduate Research in MMBIO. 131 students from 2024-Present, 1 to medical school, 0 to dental school, 0 to graduate school. **Bold indicates Medical School**, Underline indicates Dental School, *Italics indicates Graduate School attendance* after graduation.

1. 2025-13 students
 - Clark Avondet, Eden Beazer, Luki Benavente, Aubree Bench, Brigham Blackwell, Jonathon Hansen, Luke Jackson, Trevor Kendrick, Kyla King, Sara Rapp, Andrew Steadman, America Teare, Bokai Zhang
2. 2024-16 students

- Clark Avondet, Eden Beazer, Luki Benavente, Aubree Bench, Brigham Blackwell, Jonathon Hansen, Luke Jackson, Trevor Kendrick, Kyla King, Sara Rapp, Andrew Steadman, America Teare, Bokai Zhang, **Nathan Vaughn**, Pierce Olsen, James Holman
- E. Undergraduate Students Mentored in NDFS 494R Undergraduate Research in NDFS. 131 students from 2014-2023, 33 to medical school, 3 to dental school, 21 to graduate school. Since the last rank advancement packet was submitted in Fall 2018, I have mentored 76 undergraduate students, with 23 going to medical school, 2 to dental school, and 13 to graduate school. **Bold indicates Medical School**, Underline indicates Dental School, *Italics indicates Graduate School attendance after graduation.*
1. 2024-16 students
 - Eden Beazer, Aubree Bench, Owen Damitz, Jakob Lenker, Luke Jackson, Trevor Kendrick, Jared Wieland, **Jared Carter**, Nathan Vaughn, Luki Benavente, Jonathon Hansen, Pierce Olsen, Sara Rapp, Andrew Steadman, Bokai Zhang, Jackson Cook
 2. 2023-21 students
 - Clarissa Baird, Thomas Bashford, Eden Beazer, Aubree Bench, Owen Damitz, Isaiah Duncan, Ethan Jones, Liana Leininger, Jakob Lenker, Spencer Paulsen, Alexander Benbrook, Luke Jackson, Trevor Kendrick, Spencer Ward, Jared Wieland, Jared Carter, *Peter Ellsworth*, Emily Hill, Jordan Johns, Nathan Vaughn, Kristopher Wieland
 3. 2022-21 students
 - Alexander Benbrook, Jared Carter, **Ethan Crawford**, Josiah Davis, *Peter Ellsworth*, Emily Hill, Jordan Johns, **Kelson Knighton**, **Chad Mourino**, Spencer Paulsen, Zachary Tullis, Nathan Vaughn, Kristopher Wieland, Andrew Miner, Mikayla Nance, Andrea Augustus, **Jordan Davis**, Olivia Grinnell, James Holman, Brayden Rasmussen, Kacie Russon
 4. 2021-23 students
 - Alexander Benbrook, Adelyn Carlson, Jared Carter, **Ethan Crawford**, **Jordan Davis**, *Peter Ellsworth*, Aubrey Gallafant, Olivia Grinnell, James Holman, **Kelson Knighton**, *Connor Littlefield*, Melinda Merrill, **Chad Mourino**, Kacie Russon, Kristopher Wieland, **Joseph Beales**, Liana Leininger, **Kyle Hendricks**, *Weston Elison*, Alizah Folau, *Daelin Jensen*, *Drake Watkins*, Jared Wieland
 5. 2020-27 students
 - Andrew Barlow, **Joseph Beales**, **Jordan Davis**, *Weston Elison*, *Peter Ellsworth*, Alizah Folau, Olivia Grinnell, **Kyle Hendricks**, **Kavan Hess**, *Daelin Jensen*, Liana Leininger, *Connor Littlefield*, **Chad Mourino**, Kaitlin Pace, Kacie Russon, Drake Watkins, Jared Wieland, Kristopher Wieland, **Haokun Yang**, **Trevor Lloyd**, Brennan Leininger, **Talon Aitken**, Melanie Baxter, **Nathan Brown**, *Idongesit Ekpo*, Austin Mason, Miriam Ross
 6. 2019-30 students
 - **Talon Aitken**, Andrew Barlow, Melanie Baxter, **Joseph Beales**, **Nathan Brown**, Libby Bunker, *Idongesit Ekpo*, *Weston Elison*, Brandon Harber, **Kyle**

Hendricks, Kavan Hess, Daelin Jensen, Brennan Leininger, Connor Littlefield, Trevor Lloyd, Miriam Ross, Jared Sheets, Haokun Yang, Lauren Manwaring, Matthew Austin, Bailey Benson, Collin Christensen, Jacqueline Crabtree, Nathanael Jensen, Aaron Leifer, Moroni Lopez, Courtney Smith, Brooke Smyth, Ryan Stockard, Adam Wynn

7. 2018-34 students

- **Talon Aitken, Matthew Austin, Jasmine Banner, Andrew Barlow, Bailey Benson, Nathan Brown, Collin Christensen, Jacqueline Crabtree, Weston Elison, Brandon Harber, Kyle Hendricks, Kavan Hess, Daelin Jensen, Nathanael Jensen, Aaron Leifer, Brennan Leininger, Trevor Lloyd, Moroni Lopez, Lauren Manwaring, Miriam Ross, Jared Sheets, Courtney Smith, Brooke Smyth, Ryan Stockard, Adam Wynn, Cortney Mortensen, Kenneth Call, Parker Booren, Peter Ellsworth, Samuel Grover, Kyle Kener, Emily Krueger, Mason Poffenbarger, Austin Ricks**

8. 2017- 25 students

- **Talon Aitken, Matthew Austin, Jasmine Banner, Andrew Barlow, Parker Booren, Kenneth Call, Collin Christensen, Jaqueline Crabtree, Sam Grover, Nathanael Jensen, Kyle Kener, Aaron Leifer, Trevor Lloyd, Moroni Lopez, Lauren Manwaring, Mason Poffenbarger, Austin Ricks, Miriam Ross, Courtney Smith, Brooke Smyth, Adam Wynn, Emily Barrett, Daniel Lathen, Jason Ray, Zoey Roth**

9. 2016-23 students

- **Matthew Ballard, Emily Barrett, Parker Booren, Kevin Garland, Sam Grover, Kyle Kener, Daniel Lathen, Aaron Leifer, Joseph Levie, Jessica McClintock, Jason Ray, Zoey Roth, Courtney Smith, Louis Utsch, Adam Wynn, Shantel Sanders, Kaden Walker, Ben Bitner, Ansom Crum, Amanda Haines, Ben Jack, Sean Kang, Brent Wright**

10. 2015-21 students

- **Emily Barrett, Ben Bitner, Ansom Crum, Kevin Garland, Sam Grover, Amanda Haines, Ben Jack, Sean Kang, Kyle Kener, Jason Ray, Chad Tidwell, Jordan Tingey, Louis Utsch, Brent Wright, Matthew Ballard, Jessie Beck, Preston Christensen, Hye Doh, Carrie Draney, Jeremy Reid, Lon Tracy**

11. 2014-13 students

- **Ben Bitner, Carrie Draney, Amanda Haines, Kyle Kener, Jason Ray, Jeremy Reid, Jordan Tingey, Brent Wright, Doug Wall, Mark Schelrf, Steven Shepherd, Andrew Stratford, Natalie Wachlin**

F. Where Mentored Students have gone

1. Nathan Vaughan: MD, Texas Tech University
2. Jared Carter: DO, Noorda College of Osteopathic Medicine
3. Kristopher Wieldand: DDS, University of Texas Health San Antonio
4. Peter Ellsworth: PhD, University of California, Irvine
5. Ethan Crawford: MD, Virginia Commonwealth University

6. Kelson Knigton: DO, Rocky Vista University
7. Chad Mourino: MD Baylor Medical School
8. Jordan Davis: DO, Western University of Health Science
9. Weston Elison: PhD, University of California, San Diego
10. Daelen Jensen: PhD, The Ohio State University
11. Drake Watkins: JD, University of Tennessee
12. Connor Littelfield: PhD, University of Utah
13. Joseph Beales: MD, Texas Tech University
14. Kyle Hendricks: DO, Midwestern University
15. Kavan Hess: DO, Idaho College of Osteopathic Medicine
16. Trevor Lloyd: MD, University of California, Los Angeles
17. Brennan Leininger: DDS, University of California, Los Angeles
18. Haokun Yang: MD, University of Utah
19. Talon Aitken: DO, Des Moines University
20. Nathan Brown: MD, Washington State University
21. Idongesit Ekpo: PhD, University of Chicago
22. Jared Sheets: MS, University of Utah
23. Collin Christensen: PA, Southern University
24. Jacqueline Crabtree: MS, Brigham Young University
25. Aaron Leifer: PhD, University of Utah
26. Nathanael Jensen: MD, University of Utah
27. Moroni Lopez: MD, University of Utah
28. Brooke Smyth: MS, University of Texas, Southwestern
29. Ryan Stockard: MD, University of Utah
30. Adam Wynn: MD, Texas Tech University
31. Matthew Austin: MD/PhD, Indiana University
32. Jasmine Banner: MD, University of Utah
33. Lauren Manwaring: MD, Uniformed Services University of the Health Sciences
34. Parker Booren: DO, Virginia Tech University
35. Samuel Grover: DO, AT Stills University
36. Kyle Kener: MD, Texas Tech University
37. Emily Krueger: MS, Brigham Young University
38. Courtney Mortenson: PA, Idaho State University
39. Mason Poffenbarger: MD, University of Texas Health San Antonio
40. Austin Ricks: MD, University of Arizona
41. Emily Barrett: MS, University of Utah
42. Daniel Lathen: PhD, University of Utah
43. Jason Ray: PhD, Yale University
44. Zoey Roth: MS, Oregon Health and Sciences University
45. Matthew Ballard: MD, Rush University
46. Kevin Garland: MD, Case Western Reserve University
47. Joseph Levie: MD, Trinity School of Medicine
48. Jessica McClintock: MS, Boston University
49. Ansom Crum: JD, Emory University
50. Benjamin Jack: DO, University of Northern Texas Health Science Center
51. Sean Kang: MBA, Brigham Young University
52. Benjamin Bitner: MD, University of California, Irvine
53. Brent Wright: DO, Rocky Vista University
54. Chad Tidwell: DO, Kansas City University

55. Jordan Tingey: DDS, Roseman University
56. Jessie Beck: MS, Imperial College London
57. Carrie Draney: MS, Brigham Young University
58. Jeremy Reid: DO, Western University of Health Sciences
59. Andrew Stratford: MS, Colorado State University
60. Doug Wall: MD, Florida Atlantic University

VI. SCHOLARSHIP

- A. Publications**-for all **JS Tessem** is in bold, undergraduates are *italicized*, and graduate students are underlined.

Manuscripts in Preparation

1. *Ellsworth PN, Carter JD, Herring JA, Hess K, Wieland KL, Saito J, Marchant ED, Marchant ND, Watkins D, Bikman BT, **Tessem JS**. Nr4a3 regulates respiration of adipose tissue through the Mek1-Drp1 signaling pathway.*
2. Deleye Y, Crabtree JA, **Tessem JS**, White PJ. Role of PPM1K in the pancreatic beta cell.
3. Racine KC, Iglesias-Carres L, Herring JA, *Wieland KL, Ellsworth PN*, Lambirth KC, **Tessem JS**, Ferruzzi MG, Kay CD, Neilson AP. Protective effect of cocoa flavanols are dependent on sex and an intact gut microbiome in a mouse model of Type-2 Diabetes.
4. Tippetts TS, Chowdhury K, Velasco J, Wang ST, Raichur S, Lang M, Wilkerson JL, Maschek JA, Crabtree JA, Byrne S, Cluntun A, Funai K, **Tessem JS**, Cox J, Ducker G, Rutter JP, Holland WL, Summers SA. C16-ceramide inhibits mitochondrial function and glucose utilization in pancreatic beta cells to inhibit insulin secretion and drive type 1 and type 2 diabetes.

Published Manuscripts

1. Sweet MG, Iglesias-Carres L, *Ellsworth PN, Carter JD*, Nielsen DM, Aylor DL, **Tessem JS**, Neilson AP. Phenotype variability in diet-induced obesity and response to (-)-epigallocatechin gallate supplementation in a Diversity Outbred mouse cohort: A model for exploring gene x diet interactions for dietary bioactives. *Nutr Res.* 2024 Nov 26;133:78-93. doi: 10.1016/j.nutres.2024.11.008. Epub ahead of print. PMID: 39705912.
2. Racine KC, Iglesias-Carres L, Herring JA, *Wieland KL, Ellsworth PN*, **Tessem JS**, Ferruzzi MG, Kay CD, Neilson AP. The high-fat diet and low-dose streptozotocin type-2 diabetes model induces hyperinsulinemia and insulin resistance in male but not female C57BL/6J mice. *Nutr Res.* 2024 Sep 14;131:135-146. doi: 10.1016/j.nutres.2024.09.008. Epub ahead of print. PMID: 39389000.
3. Herring JA, Crabtree JE, Hill JT, **Tessem JS**. Loss of glucose-stimulated β -cell Nr4a1 expression impairs insulin secretion and glucose homeostasis. *Am J Physiol Cell Physiol.* 2024 Oct 1;327(4):C1111-C1124. doi: 10.1152/ajpcell.00315.2024. Epub 2024 Sep 2. PMID: 39219449.
4. Ruiz-Otero N, **Tessem JS**, Banerjee RR. Pancreatic islet adaptation in pregnancy and postpartum. *Trends Endocrinol Metab.* 2024 Sep;35(9):834-847. doi: 10.1016/j.tem.2024.04.007. Epub 2024 May 1. PMID: 38697900.

5. Ellsworth PN, Herring JA, Leifer AH, Ray JD, Elison WS, Poulson PD, Van Ry PM, Tessem JS. Nkx6.1 mediated proliferation is dependent on the Transcription Factor CEBP/A. *Biology* **2024**, *13*, 110. <https://doi.org/10.3390/biology13020110>
6. Krueger, E.S.; Griffin, L.E.; Beales, J.L.; Lloyd, T.S.; Brown, N.J.; Elison, W.S.; Kay, C.D.; Neilson, A.P.; Tessem, J.S. Bioavailable Microbial Metabolites of Flavanols Demonstrate Highly Individualized Bioactivity on In Vitro β -Cell Functions Critical for Metabolic Health. *Metabolites* **2023**, *13*, 801. <https://doi.org/10.3390/metabo13070801>
7. Imai Y, Soleimanpour SA, **Tessem JS**. Editorial: Study of pancreatic islets based on human models to understand pathogenesis of diabetes. *Front Endocrinol (Lausanne)*. 2023 Jan 9;13:1128653. doi: 10.3389/fendo.2022.1128653. PMID: 36714557; PMCID: [PMC9875287](https://pubmed.ncbi.nlm.nih.gov/36714557/).
8. Racine KC, Iglesias-Carres L, Herring JA, Ferruzzi MG, Kay CD, Tessem JS, Neilson AP. Cocoa extract exerts sex-specific anti-diabetic effects in an aggressive type-2 diabetes model: A pilot study. *Biochem Biophys Res Commun*. 2022 Oct 20;626:205-210. doi: 10.1016/j.bbrc.2022.08.018. Epub 2022 Aug 11. PMID: [35994831](https://pubmed.ncbi.nlm.nih.gov/35994831/).
9. Allen, J.G.; Tessem, J.S. Ca²⁺ Sensors Assemble: Function of the MCU Complex in the Pancreatic Beta Cell. *Cells* **2022**, *11*, 1993. <https://pubmed.ncbi.nlm.nih.gov/35805078/>
10. Iglesias-Carres L, Krueger ES, Herring JA, Tessem JS, Neilson AP. Potential of Phenolic Compounds and Their Gut Microbiota-Derived Metabolites to Reduce TMA Formation: Application of an In Vitro Fermentation High-Throughput Screening Model. *J Agric Food Chem*. 2022 Mar 2. doi: 10.1021/acs.jafc.2c00247. Epub ahead of print. PMID: [35235743](https://pubmed.ncbi.nlm.nih.gov/35235743/).
11. Krueger, E.S.; Beales, J.L.; Russon, K.B.; Elison, W.S.; Davis, J.R.; Hansen, J.M.; Neilson, A.P.; Hansen, J.M.; Tessem, J.S. Gut Metabolite Trimethylamine N-Oxide Protects INS-1 β -Cell and Rat Islet Function under Diabetic Glucolipotoxic Conditions. *Biomolecules* **2021**, *11*, 1892. <https://doi.org/10.3390/biom11121892>
12. Aitken TJ, Crabtree JE, Jensen DM, Hess KH, Leininger BR, Tessem JS. Decreased proliferation of aged rat beta cells corresponds with enhanced expression of the cell cycle inhibitor p27KIP1. *Biol Cell*. 2021 Sep 14. doi: 10.1111/boc.202100035. Epub ahead of print. PMID: [34523154](https://pubmed.ncbi.nlm.nih.gov/34523154/).
13. Simonett SP, Shin S, Herring JA, Bacher R, Smith LA, Dong C, Rabaglia ME, Stapleton DS, Schueler KL, Choi J, Bernstein MN, Turkewitz DR, Perez-Cervantes C, Spaeth J, Stein R, Tessem JS, Kendziorowski C, Keles S, Moskowitz IP, Keller MP, Attie AD. Identification of direct transcriptional targets of NFATC2 that promote β -cell proliferation. *J Clin Invest*. 2021 Sep 7:144833. doi: 10.1172/JCI144833. Epub ahead of print. PMID: [34491912](https://pubmed.ncbi.nlm.nih.gov/34491912/).
14. Krueger ES, Lloyd TS, Tessem JS. The accumulation and molecular effects of Trimethylamine N-Oxide on Metabolic Tissues: It's not all bad. *Nutrients*. 2021 Aug 21;13(8), 2873; <https://doi.org/10.3390/nu13082873> .

15. *Jensen DM, Hendricks KV, Mason AT, Tessem JS*. Good Cop, Bad Cop: The Opposing Effects of Macrophage Activation State on Maintaining or Damaging Functional β -Cell Mass. *Metabolites*. 2020 Nov 26;10(12):485. doi: 10.3390/metabo10120485. PMID: 33256225; PMCID: [PMC7761161](#).
16. Griffin LE, Essenmacher L, [Racine KC](#), [Iglesias-Carres L](#), **Tessem JS**, Smith SM, Neilson AP. Diet-induced obesity in genetically diverse collaborative cross mouse founder strains reveals diverse phenotype response and amelioration by quercetin treatment in 129S1/SvImJ, PWK/EiJ, CAST/PhJ, and WSB/EiJ mice. *J Nutr Biochem*. 2021 Jan; 87:108521. doi: 10.1016/j.jnutbio.2020.108521. Epub 2020 Oct 8. PMID: [33039581](#).
17. [Chen T](#), Hill JT, Moore TM, Cheung ECK, Olsen ZE, Piorczynski TB, Marriott TD, **Tessem JS**, [Walton CM](#), Bikman BT, Hansen JM, Thomson DM. Lack of skeletal muscle liver kinase B1 alters gene expression, mitochondrial content, inflammation and oxidative stress without affecting high-fat diet-induced obesity or insulin resistance. *Biochim Biophys Acta Mol Basis Dis*. 2020 Aug 1;1866(8):165805. doi: 10.1016/j.bbadis.2020.165805. Epub 2020 Apr 24. PMID: 32339642; PMCID: [PMC8432303](#).
18. [Herring JA](#), *Elison WS*, **Tessem JS**. Function of Nr4a Orphan Nuclear Receptors in Proliferation, Apoptosis and Fuel Utilization Across Tissues. *Cells*. 2019 Nov 1;8(11):1373. doi: 10.3390/cells8111373. PMID: 31683815; PMCID: [PMC6912296](#).
19. [Draney C](#), *Austin MC, Leifer AH, Smith CJ, Kener KB, Aitken TJ, Hess KH, Haines AC, Lett E, Hernandez-Carretero A, Fueger PT, Arlotto M, Tessem JS*. HDAC1 overexpression enhances β -cell proliferation by down-regulating Cdkn1b/p27. *Biochem J*. 2018 Dec 19;475(24):3997-4010. doi: 10.1042/BCJ20180465. PMID: [30322885](#).
20. *Bitner BF, Ray JD, Kener KB, Herring JA, Tueller JA, Johnson DK, Tellez Freitas CM, Fausnacht DW, Allen ME, Thomson AH, Weber KS, McMillan RP, Hulver MW, Brown DA, Tessem JS, Neilson AP*. Common gut microbial metabolites of dietary flavonoids exert potent anti-diabetes activities in beta cell and skeletal cell models. *J Nutr Biochem*. 2018 Dec; 62:95-107. doi: [10.1016/j.jnutbio.2018.09.004](#). Epub 2018 Sep 15.
21. [Parker BA](#), Smith J, Walton C, Hubbard C, Andrus J, Perry K, [Draney C](#), *Lathen DR, Kener KB, Holland WL, Thomson DM, Tessem JS, Bikman BT*. Beta-hydroxybutyrate elicits favorable mitochondrial changes in skeletal muscle. *Int J Mol Sci*. 2018 Aug 1; 19(8). pii: E2247. doi:[10.3390/ijms19082247](#).
22. *Kener KB, Munk DJ, Hancock CR, Tessem JS*. High-resolution Respirometry to Measure Mitochondrial Function of Intact Beta Cells in the Presence of Natural Compounds. *J Vis Exp*. 2018 Jan 23;(131). doi: 10.3791/57053. PubMed PMID:[29443067](#).
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B. Published Abstracts

1. [Crabtree J](#), **Tessem JS**. "The Nkx6.1 Binding Partner Mef2D Modulates Beta-cell insulin secretion and cell survival." *Diabetes* June 2024.
2. [Carter J](#), **Tessem JS**. "Nr4a3 loss impairs adipose mitochondrial respiration through downregulation of Mek1." *Physiology* May 2024.
3. [Herring JA](#), **Tessem JS**. "Gender specific effects of Nr4a1 in Obese Mice." *Physiology* May 2024.
4. [Littlefield CC](#), Hill JT, Price JC, **Tessem JS**. "Novel interaction between Nkx6.1 and Pdx1 is needed for proper Beta-cell function." *Diabetologia* September 2023
5. [Littlefield CC](#), Hill JT, **Tessem JS**. "Novel interaction between Nkx6.1 and Pdx1 is needed for proper Beta-cell function." *Diabetes* June 2023.
6. [Ellsworth P](#), [Herring J](#), [Ellison W](#), [Leifer A](#), **Tessem JS**. "The proliferative and functional roles of CEBP/a in Ins-1 832/13 cells and primary islets." *Physiology* May 2023.
7. [Carter, J](#), [Ellsworth P](#), **Tessem JS**. "Loss of Nr4a3 results in increased adipose mass and impaired adipocyte respiration." *Physiology* May 2023.
8. [Herring J](#), **Tessem JS**. "Sex-Specific Effects of Nr4a1In the Pancreatic Beta Cell." *Diabetes* June 2022.
9. [Wieland K](#), [Elison W](#), **Tessem JS**. "Elevated Glucose Negatively Regulates Nkx6.1 Protein Level in the Pancreatic Beta Cell." *The FASEB Journal* May 2022
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11. [Krueger ES](#), [Beales JL](#), [Elison WS](#), **Tessem JS**. "Gut Metabolite Trimethylamine N-oxide Protects β Cell Insulin Secretion by Reducing Oxidative Stress and Maintaining Insulin Granule Formation". *Current Developments in Nutrition* June 2021
12. [Deleye J](#), [Herring J](#), [Hess KH](#), [Leininger B](#), [McGarrah RW](#), **Tessem JS**, [White PJ](#). "The protein phosphatase PPM1K regulates ribosomal protein S6 phosphorylation in beta cells.". *Diabetes* June 2021.
13. [Littlefield CC](#), [Jensen NC](#), Hill JT, Price JC, **Tessem JS**. "Defining the Nkx6.1 Interactome in Beta Cells Reveals a Novel Interaction with Pdx1." *Diabetes* June 2021.
14. **Tessem JS**, [Yang H](#), [Herring JA](#). "Full Body Nr4a3 deletion induces obesity and glucose intolerance." *Diabetologia* September 2020.

15. Deleye J, Herring J, Hess KH, Leininger B, McGarrah RW, **Tessem JS**, White PJ. "The Protein Phosphatase M1K Connects Glucose Sensing to Protein Translation in Pancreatic Beta Cells". *Diabetes* June 2020.
16. Crabtree J, Littlefield C, **Tessem JS**. "Why does Nkx6.1 Fail to increase functional beta-cell mass in aged islets?" *FASEB J* April 2020.
17. Krueger E, Austin M, Ekpo I, Beales J, Yang H, Nielson A, **Tessem JS**. "Screening Phytochemicals for Alternative Diabetes Treatment." *FASEB J* April 2020.
18. Haokun Y, Herring J, Wynn A, Elison W, Walton C, Good L, Marchant E, Marchant N, Bikman B, **Tessem JS**. "Full Body Loss of the Nuclear Hormone Receptor Nr4a3 Induces Diabetes and Glucose Intolerance." *FASEB J* 2020.
19. Lloyd T, Griffin L, Krueger E, Beales J, Barlow A, Sheets J, Ekpo I, Ross M, Chandra P, Rathore A, Kay C, Neilson A, **Tessem JS**. "Supplemental treatment options for diabetes: how flavanol metabolites improve beta cell function." *FASEB J* 2020.
20. Herring JA, Smith CJ, Kener KB, Wynn AG, Austin MC, **Tessem JS**. "Gender Specific Effects of Nr4a1 on functional Beta cell mass". *FASEB J* April 2019.
21. Austin MC, Smyth BJ, Manwaring LP, Lopez GM, Ross MT, **Tessem JS**. "The Effects of Cocoa Flavanols and Metabolites on beta cell proliferation and survival." *FASEB J* April 2019.
22. Smith CJ, Leifer AH, Ray JD, **Tessem JS**. "Defining the role of CEBP/a in functional beta cell mass. *FASEB J* April 2019.
23. **Tessem JS**, Herring JA, Smith CJ, Austin MC, Wynn AG. "Sex-based differences in Nr4a1 Beta-cell activity" *Diabetes* June 2019.
24. Smith CJ, Kyle KB, **Tessem JS**. "Nr4a1 and Nr4a3 knock out mice have impaired glucose clearance and beta cell function under high fat feeding." *Diabetes* May 2018
25. Wynn AG, Garland KG, Kener KB, Weber KS, Bikman BT, Hancock CR, Tessem JS. "High fat fed Nr4a1 knock out mouse has significant modulation of mitochondrial respiration across various tissues" *FASEB J* April 2018.
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27. Leifer AH, Tessem JS. "MafB overexpression enhances functional beta cell mass." *FASEB J* April 2018.
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29. Poffenbarger MC, Lathen DR, Ricks A, Barlow AM, Roth ZF, Bikman BT, Tessem JS. "Molecular Mechanisms of Beta Cell Adaptation to Hyperlipidemia." *FASEB J* April 2018.
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31. Sampson M, Lathen D, Dallon B, Draney C, Ray J, Kener K, Parker B, Witt J, Gibbs J, Tessem JS, Bikman BT. "Beta-hydroxybutyrate favorably alters beta cell survival and mitochondrial bioenergetics." *FASEB J* April 2017.
32. Tessem JS, Rowley TJ, Bitner BF, Ray JD, Smithson AT, Hanson JM, Bikman BT, Neilson AP. "Monomeric cocoa procyanidins enhances beta cell function by increasing mitochondrial respiration." *FASEB J* April 2017.
33. Parker B, Dallon B, Draney C, Sampson M, Witt J, Gibbs J, Tessem JS, Bikman BT. "Beta-hydroxybutyrate favorably alters muscle cell survival and mitochondrial bioenergetics." *FASEB J* April 2017.

34. Gibbs J, Dallon B, Lewis J, Tessem JS, Reynolds PR, Bikman BT. "Diesel exhaust particle exposure compromises macrophage mitochondrial physiology." *FASEB J* April 2017.
35. Kener KB, Ray JD, Ballard M, Utsch W, Tessem JS. "Determining the role of CEBP/a in functional beta cell mass." *FASEB J* April 2017.
36. Reynolds MS, Hancock CR, Ray JD, Kener KB, Hardman JM, Tessem JS. "Beta cell deletion of Nr4a1 and Nr4a3 Nuclear Receptors Impedes Mitochondrial Respiration and Insulin Secretion." *Diabetes* June 2016.
37. Reynolds MS, Hancock CR, Ray JD, Kener KB, Hardman JM, Tessem JS. "Beta cell deletion of Nr4a1 and Nr4a3 Nuclear Receptors Impedes Mitochondrial Respiration and Insulin Secretion." *FASEB J* April 2016.
38. Rowley TJ, Bitner B, Ballard M, Smithson AT, Neilson AP, Tessem JS. "Monomeric cocoa procyanidins enhance functional beta cell mass." *FASEB J* April 2016.
39. Wright B, Garland K, Tidwell C, Kang S, Tessem JS. "Aged islets are refractory to Nkx6.1 mediated beta cell proliferation." *FASEB J* April 2016.
40. Draney C, Hobson A, Tessem JS. "HDAC1 increases functional beta cell mass." *FASEB J* April 2016.
41. Bitner B, Draney C, Hobson AE, **Tessem JS**. "Expression of Cdkn5r1 and not Cdk5 induces primary beta cell proliferation" *FASEB J* April 2015.
42. Tessem JS, Draney C, Hobson A. "Aurora Kinase A is critical for the Nkx6.1 mediated beta cell proliferation pathway" *FASEB J* April 2015.
43. Ray JD, Kener KB, Bitner BF, Wright B, Ballard M, Moss LG, **Tessem JS**. "c-Fos increases functional beta cell mass" *FASEB J* April 2015.

C. Presentations and Scientific Meeting

1. 2024 Western Regional Islet Study Group (oral), Presentation: "Defining Nr4a1 binding partners by BiOLD mass spec."
2. 2024 Western Regional Islet Study Group (oral), Presentation: "Glucose mediated manipulation of Nkx6.1 and Pdx1 interactions."
3. 2024 American Diabetes Association (oral and poster), Presentation "The Nkx6.1 Binding Partner Mef2D Modulates Beta-cell insulin secretion and cell survival."
4. 2024 American Physiology Summit 2024 (poster), Presentation: "Nr4a3 loss impairs adipose mitochondrial respiration through downregulation of Mek1."
5. 2024 American Physiology Summit 2024 (poster), Presentation: "Gender specific effects of Nr4a1 in Obese Mice."
6. 2023 University of Utah Diabetes and Metabolism Research Center Retreat (oral), Presentation "Endogenous Activators of Nr4a1 Expression."
7. 2023 Food and Human Health Program-Project Director's Meeting (oral), Presentation "Bioavailable gut microbial metabolites potentiate the beta-cell stimulatory and anti-obesity activities of poorly-bioavailable cocoa flavanols."
8. 2023 American Diabetes Association (poster), Presentation "Novel interaction between Nkx6.1 and Pdx1 is needed for proper Beta-cell function."
9. 2024 American Physiology Summit 2024 (poster), Presentation: "The proliferative and functional roles of CEBP/a in Ins-1 832/13 cells and primary islets."
10. 2024 American Physiology Summit 2024 (poster), Presentation: "Loss of Nr4a3 results in increased adipose mass and impaired adipocyte respiration."
11. 2022 Western Regional Islet Study Group (oral), Presentation: "The Proliferative and Functional Roles of CEBPa in INS-1 832/13 cells and Primary Rat Islets."

12. 2022 Western Regional Islet Study Group (oral), Presentation: "Cers6 mediated Beta cell ceramide accumulation impairs beta cell function."
13. 2022 Western Regional Islet Study Group (oral), Presentation: "Endogenous activators of Nr4a1 expression and activity."
14. 2022 American Diabetes Association (poster), Presentation: "Sex-Specific Effects of Nr4a1 in the Pancreatic Beta Cell"
15. 2022 Experimental Biology (poster), Presentation: "Elevated Glucose Negatively Regulates Nkx6.1 Protein Level in the Pancreatic Beta Cell."
16. 2022 National Institute of Food and Agriculture PD Meeting, Presentation: "Bioavailable gut microbial metabolites potentiate the beta-cell stimulatory and anti-obesity activities of poorly bioavailable cocoa flavanols."
17. 2021 Western Regional Islet Study Group (oral), Presentation: "Sex Specific Effects of Nr4a1 in the Beta Cell."
18. 2021 Western Regional Islet Study Group (oral), Presentation: "Identifying the Nkx6.1 Interactome in Beta Cells."
19. 2021 American Diabetes Association (poster), Presentation: "The protein phosphatase PPM1K regulates ribosomal protein S6 phosphorylation in beta cells."
20. 2021 American Diabetes Association (poster), Presentation: "Defining the Nkx6.1 interactome in beta cell reveals a novel interaction with Pdx1."
21. 2021 Annual Nutrition Science Meeting (poster), Presentation: "Evaluation of poorly-bioavailable cocoa flavanols and their gut microbial metabolites in potentiating anti-diabetic activities through BTBR.Cg-*Lep^{ob/ob}* *M*WiseJ mice."
22. 2021 Annual Nutrition Science Meeting (poster), Presentation: "Gut Metabolite Trimethylamine N-Oxide Protects beta cell insulin secretion by reducing oxidative stress and maintaining insulin granule formation."
23. 2021 Insulin 100, virtual oral poster, Presentation: "Ppm1k Regulates Pancreatic Beta-cell Physiology Via mTOR Independent Regulation of Ribosomal Protein S6 Phosphorylation."
24. 2020 European Association for the Study of Diabetes (poster), Presentation: "Full Body Nr4a3 deletion induces obesity and glucose intolerance."
25. 2020 American Diabetes Association (poster), Presentation: "The Protein Phosphate M1K Connects Glucose Sensing to Protein Translation in Pancreatic Beta Cells."
26. 2020 Experimental Biology (poster), Presentation: "Why Does Nkx6.1 Fail to Increase Beta-Cell Mass in Aged Islets?"
27. 2020 Experimental Biology (poster), Presentation: "Screening Phytochemicals for Alternative Diabetes Treatment"
28. 2020 Experimental Biology (poster), Presentation: "Full Body Loss of the Nuclear Hormone Receptor Nr4a3 results in induced obesity and glucose intolerance"
29. 2020 Experimental Biology (poster), Presentation: "Supplemental Treatment Options for Diabetes; How flavanol metabolites improve beta cell function"
30. 2020 Roseman University Research Symposium (poster), Presentation: "Evaluating the role of orphan nuclear receptor Nr4a1 in mice."
31. 2020 Keystone Symposia-Advances in Islet Biology (poster), Presentation: "Sex specific effects of Nr4a1 on functional beta cell mass"
32. 2019 American Diabetes Association (poster), Presentation: PPM1K Regulates beta-Cell Proliferation, Insulin Content, and GSIS
33. 2019 American Diabetes Association (poster), Presentation: Sex-Based Differences in Nr4a1 Beta-Cell Activity

34. 2019 Experimental Biology (poster), Presentation: "Gender specific effects of Nr4a1 on functional β -cell mass."
35. 2019 Experimental Biology (poster), Presentation: "The Effect of Cocoa Flavanols and Metabolites on β -cell Proliferation and Survival."
36. 2019 Experimental Biology (poster), Presentation: "Defining the role of CEBP/ α in Functional β -cell mass."
37. 2018 Islet Society (poster), Presentation "Sex-Based Differences in Nr4a1 Beta-Cell Activity."
38. 2018 American Diabetes Association (poster), Presentation: "Nr4a1 and Nr4a3 Knock Out Mice Have Impaired Glucose Clearance and Beta-cell function under high fat feeding."
39. 2018 Experimental Biology (oral), Presentation: "Effects of Epicatechin and its Gut Metabolites on Beta Cell Function, Survival and Proliferation."
40. 2018 Experimental Biology (oral), Presentation: "Molecular Mechanisms of Beta Cell Adaptation to Hyperlipidemia."
41. 2018 Experimental Biology (poster), Presentation: "MafB Overexpression Enhances Functional Beta Cell Mass."
42. 2018 Experimental Biology (poster), Presentation: "High fat fed Nr4a1 knock out mouse has significant modulation of mitochondrial respiration across various tissues."
43. 2018 Experimental Biology (poster), Presentation: "The expression differences of cyclin dependent kinase inhibitors in aged and young pancreatic beta cells."
44. 2017 American Diabetes Association (poster), Presentation: "Downregulation Impedes beta cell growth, survival and function"
45. 2017 Experimental Biology (oral), Presentation: "Monomeric cocoa epicatechins enhance glucose stimulated insulin secretion."
46. 2017 Experimental Biology (poster), Presentation: "Beta hydroxybutyrate favorably alters beta cell survival and mitochondrial bioenergetics."
47. 2017 Experimental Biology (poster), Presentation: "Beta hydroxybutyrate favorably alters muscle cell survival and mitochondrial bioenergetics."
48. 2017 Experimental Biology (poster), Presentation: "Determining the role of CEBP/ α in functional beta cell mass."
49. 2016 Experimental Biology (poster), Presentation: "Overexpression of HDAC1 induces functional beta cell mass."
50. 2016 Experimental Biology (poster), Presentation: "Monomeric Cocoa Procyanidins enhance functional Beta Cell Mass."
51. 2016 Experimental Biology (poster), Presentation: "Aged Islets are Refractory to Nkx6.1 mediated beta cell proliferation."
52. 2016 American Diabetes Association (poster), Presentation: "Nr4a1 Mediated Beta Cell Proliferation Pathway"
53. 2016 LDS Life Sciences Symposium (oral), Presentation: "The Nr4a1 Mediated Beta Cell Proliferation Pathway"
54. 2015 Experimental Biology (poster), Presentation: "Aurora kinase A is critical for the Nkx6.1 mediated beta cell proliferation pathway"
55. 2015 Experimental Biology (poster), Presentation: "Expression of Cdk5r1, and not Cdk5, induces primary beta cell proliferation"
56. 2015 Experimental Biology (poster), Presentation: "c-Fos increases functional beta cell mass"
57. 2012 Keystone Symposia-Advances in Islet Biology (oral), Presentation: "Nkx6.1 mediated beta cell proliferation pathways"

58. 2011 Beta cell Biology Consortium Investigator Retreat (poster), Presentation: "Nkx6.1 mediated beta cell proliferation involves Nr4a1 nuclear receptors"
59. 2010 Keystone Symposia-Islet Biology (oral), Presentation: "The role of Nr4a nuclear receptors in Nkx6.1 mediated beta-cell proliferation"
60. 2009 Keystone Symposia-Type 2 diabetes and insulin resistance (poster), Presentation: "Aurora kinase A induces proliferation of rat islet beta cells"
61. 2008 Keystone Symposia-Islet and beta cell biology (poster), Presentation: "Nkx6.1 mediated beta cell proliferation"
62. 2007 Beta cell biology consortium investigator retreat (poster), Presentation: "Macrophages prevent islet loss and diabetes in a mouse model of chronic pancreatitis"
63. 2006 Keystone Symposia-The macrophage: homeostasis/immunoregulation/disease (oral), Presentation: "Macrophages prevent islet loss and diabetes in a mouse model of chronic pancreatitis"
64. 2005 Keystone Symposia-Towards Understanding Islet Biology (poster), Presentation: "Bone marrow derived cells prevent islet loss and diabetes in a mouse"
65. 2004 Keystone Symposia-Cell Cycle and Development (poster), Presentation: "E2F1 and E2F2 loss disrupts S and M phase coordination in exocrine tissue"
66. 2001 Beatson International Cancer Conference (poster), Presentation: "Transcription modification in human colon adenocarcinoma cells by vitamins and phytochemicals"
67. 2000 American Association of Cancer Research (poster), Presentation: "Synergistic effect of Vitamin C: K3 induction of apoptosis in the WIDR cell line"

D. Invited Scientific Meeting Oral Presentations

1. 2024 American Diabetes Association: "The Nkx6.1 Binding Partner Mef2D Modulates Beta-Cell Insulin Secretion and Cell Survival."
2. 2023 European Association for the Study of Diabetes Presentation: "Novel interaction between Nkx6.1 and Pdx1 is needed for proper beta cell function."
3. 2023 Food and Human Health Program-Project Director's Meeting: "Bioavailable gut microbial metabolites potentiate the beta-cell stimulatory and anti-obesity activities of poorly bioavailable cocoa flavanols."
4. 2021 Experimental Biology Presentation: "Full Body Loss of the Nuclear Hormone Receptor Nr4a3 results in induced obesity and glucose intolerance."
5. 2020 European Association for the Study of Diabetes (virtual) Presentation: "Full Body Nr4a3 deletion induces obesity and glucose intolerance."
6. 2019 Western Regional Islet Study Group, Presentation: "Exploring the role of Nr4a nuclear hormone receptors on functional beta cell mass."
7. 2018 Experimental Biology, Presentation: "Effects of Epicatechin and its Gut Metabolites on Beta Cell Function, Survival and Proliferation."
8. 2017 Experimental Biology, Presentation: "Monomeric cocoa procyanidins enhances Beta-cell function by increasing mitochondrial respiration."
9. 2016 LDS Life Sciences Symposium, Presentation: "The Nr4a1 Mediated Beta Cell Proliferation Pathway."
10. 2012 Keystone Symposia-Advances in Islet Biology, Presentation: "Nkx6.1 mediated beta cell proliferation pathway"
11. 2006 Keystone Symposia-The Macrophage: Homeostasis/Immunoregulation/Disease, Presentation: "Macrophages prevent islet loss and diabetes in a mouse model of chronic pancreatitis."

12. 2006 Western Regional Islet Study Group, Presentation: "Macrophages prevent islet loss and diabetes in a mouse model of pancreatitis."

E. Invited University, Professional, and Community Presentations

1. 2024 Johns Hopkins University, Presentation: "Exploring the role of Nr4a nuclear hormone receptors on functional beta cell mass."
2. 2023 North Carolina State University Plants for Human Health Institute, Presentation: "Exploring the effects of dietary bioactives on functional beta cell mass."
3. 2022 Louisiana State University Pennington Institute, Presentation: "Exploring the role of Nr4a nuclear hormone receptors on functional beta cell mass."
4. 2022 University of Wisconsin Endocrine Grand Rounds, Presentation: "Exploring the role of Nr4a nuclear hormone receptors on functional beta cell mass."
5. 2019 University of Utah Diabetes Research Center, Presentation: "Exploring the role of Nr4a nuclear hormone receptors on functional beta cell mass."
6. 2018 University of Michigan Diabetes Research Center, Presentation: "Exploring the role of Nr4a nuclear hormone receptors on functional beta cell mass."
7. 2018 Eastern Michigan University, Presentation: "Exploring the role of Nr4a nuclear hormone receptors on functional beta cell mass."
8. 2017 Brigham Young University Department of Nutrition, Dietetics and Food Science Seminar Series, Presentation: "Exploring the role of Nr4a nuclear hormone receptors on functional beta cell mass."
9. 2017 University of Colorado Barbara Davis Center for Childhood Diabetes, Presentation: "Exploring the role of Nr4a nuclear hormone receptors on functional beta cell mass."
10. 2017 Duke University Molecular Physiology Institute, Presentation: "Exploring the role of Nr4a nuclear hormone receptors on functional beta cell mass."
11. 2017 City of Hope Beckman Research Institute, Presentation: "Exploring the role of Nr4a nuclear hormone receptors on functional beta cell mass."
12. 2017 Timpanogous Regional Hospital Grand Rounds, Presentation: "Increasing Functional Beta Cell Mass as a Treatment for Diabetes"
13. 2017 ACED Diabetes Camp, Presentation: "Increasing Functional Beta Cell Mass as a Treatment for Diabetes"
14. 2017 Juvenile Diabetes Research Foundation research update-Southern Utah Area: "Increasing Functional Beta Cell Mass as a Treatment for Diabetes"
15. 2017 Juvenile Diabetes Research Foundation research update-Utah County Area, Presentation: "Enhancing functional beta cell mass as a treatment for T1D"
16. 2017 Brigham Young University Medicinal Plants Seminar, Presentation: "Cocoa epicatechins to modulate beta cell function"
17. 2016 Juvenile Diabetes Research Foundation research update-Rocky Mountain Chapter, Presentation: "Enhancing functional beta cell mass as a treatment for T1D"
18. 2015 Juvenile Diabetes Research Foundation research update-Utah County Area, Presentation: "Enhancing functional beta cell mass as a treatment for T1D"
19. 2014 Brigham Young University, Molecular and Microbiology Department Seminar Series, Presentation: "Nr4a nuclear hormone receptors and beta cell proliferation"
20. 2013 Brigham Young University, Department of Nutrition, Dietetics and Food Science Seminar Series, Presentation: "Nr4a nuclear hormone receptors and beta cell proliferation"
21. 2011 Duke University Pharmacology Retreat, Presentation: "Nr4a1 and the Nkx6.1 pathway"

22. 2010 Brigham Young University, Department of Physiology and Developmental Biology Seminar Series, Presentation: "Nr4a1 and Nkx6.1 pathway"
23. 2008 Brigham Young University, Department of Physiology and Developmental Biology Seminar Series, Presentation: "Aurora Kinase A induces proliferation of beta cells while maintaining beta cell function."

F. Student Presentations

1. 2024 Western Regional Islet Study Group (oral), Presentation: "Defining Nr4a1 binding partners by BioID mass spec." Presented by Eden Beazer.
2. 2024 Western Regional Islet Study Group (oral), Presentation: "Glucose mediated manipulation of Nkx6.1 and Pdx1 interactions." Presented by Nathan Vaughan.
3. 2024 American Physiology Summit 2024, Poster: "Nr4a3 loss impairs adipose mitochondrial respiration through downregulation of Mek1." Presented by Jared Carter
4. 2024 American Physiology Summit 2024, Poster: "Gender specific effects of Nr4a1 in Obese Mice." Presented by Jacob Herring
5. 2024 Utah Conference of Undergraduate Research, Oral: "Adverse effects of Nr4a3 full body knockouts on adipose tissue." Presented by Jared Carter
6. 2024 Utah Conference of Undergraduate Research, Poster: "The overexpression of Stx1A and its effects on glucose stimulated insulin secretion in pancreatic beta cells." Presented by Jakob Lenker
7. 2024 Utah Conference of Undergraduate Research, Poster: "The Role of Sirt7 in Beta Cell Function and Insulin Secretion." Presented by Trevor Kendrick
8. 2024 Utah Conference of Undergraduate Research, Poster: "The Effect of Epicatechin and its Microbial Metabolites on Differing Pathways of Beta-Cell Death in Type I and Type II Diabetes" Presented by Aubree Bench
9. 2024 Utah Conference of Undergraduate Research, Poster: "Glucose concentrations effect on binding interactions beta cell transcription factors Nkx6.1 and Pdx1 and subsequent transcriptional regulation of downstream targets" Presented by Nathan Vaughan
10. 2024 Utah Conference of Undergraduate Research, Poster: "Protein-Protein Binding Between the Beta Cell Transcription Factor Nkx6.1 and PACS1 in Rat Beta Cells." Presented by Spencer Paulsen
11. 2024 Utah Conference of Undergraduate Research, Poster: "Hyperglycemic Conditions Impair Essential Nkx6.1 Expression in Beta Cells." Presented by Jared Wieland
12. 2024 Utah Conference of Undergraduate Research, Poster: "Exploring the bioactivity of flavonoid metabolites on beta cell function under GLT conditions." Presented by Eden Beazer
13. 2024 Utah Conference of Undergraduate Research, Poster: "Determining the binding partners of orphan nuclear receptor Nr4a3 and their effect on proliferation and insulin secretion in the beta cells" Presented by Owen Damitz
14. 2023 University of Utah Diabetes and Metabolism Research Center Retreat, Talk: "Endogenous Activators of Nr4a1 Expression." Presented by Jacob Herring
15. 2023 American Physiology Summit, Poster: "The proliferative and functional roles of CEBP/a in Ins-1 832/13 cells and primary islets." Presented by Peter Ellsworth
16. 2023 American Physiology Summit, Poster: "Loss of Nr4a3 results in increased adipose mass and impaired adipocyte respiration." Presented by Jared Carter
17. 2023 Utah Conference of Undergraduate Research, Poster: "Discovering effects of fatty acids on Nr4a1-NBRE interaction." Presented by Alex Benbrook

18. 2023 Utah Conference of Undergraduate Research, Poster: "Treatment of INS-1 beta cells with oleate affects the expression of the glycolytic downstream targets of Nr4a1 and Nr4a3 and insulin secretion." Presented by Emily Hill
19. 2023 Utah Conference of Undergraduate Research, Poster: "The Postprandial Effects of the Nr4a Transcription Factors is essential for GSIS." Presented by Jordan Johns
20. 2023 Utah Conference of Undergraduate Research, Poster: "The downstream effects of adrenergic receptors on beta cells." Presented by Nathan Vaughan
21. 2023 Utah Conference of Undergraduate Research, Talk: "Elevated Blood Glucose Levels Negatively Regulate Nkx6.1 Levels in the Pancreatic Beta Cell." Presented by Kristopher Wieland
22. 2023 Utah Conference of Undergraduate Research, Poster: "Genome wide CRISP-Cas9 Screen Used to Build a Guide-RNA library for genetic screens of INS-1 cells used under conditions of glucolipotoxicity, proliferation and insulin secretion." Presented by Spencer Paulsen.
23. 2023 Utah Conference of Undergraduate Research, Talk: "The role of CEBP/A in the unfolded protein response in INS-1 beta cells and primary rat islets." Presented by Peter Ellsworth.
24. 2023 Utah Conference of Undergraduate Research, Talk: "Adverse effects of KO Nr4a3 on Respiration in Adipose." Presented by Jared Carter.
25. 2022 Western Regional Islet Study Group, Talk: "The Proliferative and Functional Roles of CEBPa in INS-1 832/13 cells and Primary Rat Islets." Presented by Peter Ellsworth
26. 2022 Western Regional Islet Study Group, Talk: "Cers6 mediated Beta cell ceramide accumulation impairs beta cell function." Presented by Jackie Crabtree
27. 2022 Western Regional Islet Study Group, Talk: "Endogenous activators of Nr4a1 expression and activity." Presented by Jacob Herring
28. 2022 Experimental Biology, Poster: "Elevated Glucose Negatively Regulates Nkx6.1 Protein Level in the Pancreatic Beta Cell." Presented by Kristopher Wieland
29. 2022 Utah Conference of Undergraduate Research, Talk: "Trimethylamine N-oxide directly interacts with the IRE1a receptor to promote insulin secretion through ER chaperones." Presented by Jordan Davis.
30. 2022 Utah Conference of Undergraduate Research, Talk: "Unsaturated Fatty Acids and Nr4a1-nbre binding". Presented by Olivia Grinnell.
31. 2022 Utah Conference of Undergraduate Research, Talk: "Effects of monomeric cocoa epicatechin on pancreatic alpha cell mitochondrial respiration and glucagon secretion". Presented by Chad Mourino
32. 2022 Utah Conference of Undergraduate Research, Talk: "Exploring the effects of fatty acids on Nr4a1 binding." Presented by Alex Benbrook
33. 2022 Utah Conference of Undergraduate Research, Poster: "Effects of the Flavonoid, Epicatechin, on Mitochondrial Respiration and Glucose-Regulated Glucagon Secretion in the Pancreatic Alpha Cell." Presented by Ethan Crawford
34. 2022 Utah Conference of Undergraduate Research, Poster: "The deleterious effect of Nr4a3 Full Body knockouts on the electron transport chain in adipose tissue". Presented by Peter Ellsworth
35. 2022 Utah Conference of Undergraduate Research, Poster: "Effects of Nr4a3 full body knockout on adipocyte mitochondrial expression and the TCA cycle." Presented by Jared Carter
36. 2022 Utah Conference of Undergraduate Research, Poster: "Building of a guide-RNA library for genome-wide forward genetic screen of INS-1 cells". Presented by Kelson Knighton.

37. 2022 Utah Conference of Undergraduate Research, Poster: "Hyperglycemia impairs insulin production and secretion by Nkx6.1 translocation via reactive oxygen species." Presented by Kristopher Wieland
38. 2022 Utah Conference of Undergraduate Research, Poster: "TMAO restores depleted IRE1a protein content in GLT". Presented by Kacie Russon.
39. 2021 Utah Conference of Undergraduate Research, Virtual: "Antioxidant effects of Flavonoids in Treating Diabetes." Presented by Alizah Folau
40. 2021 Utah Conference of Undergraduate Research, Virtual: "Effects of TMAO on beta-cell apoptosis." Presented by Jordan Davis.
41. 2021 Utah Conference of Undergraduate Research, Virtual: "Downstream targets of Nkx6.1 and Pdx1 present targets for inducing beta-cell proliferation." Presented by Daelin Jensen
42. 2021 Utah Conference of Undergraduate Research, Virtual: "Exploring the effect of oleate on Nr4a1 transcriptional activity and binding." Presented by Liana Leininger
43. 2021 Utah Conference of Undergraduate Research, Virtual: "The effects of glucolipotoxicity induced ROS on Beta Cell Nkx6.1 expression and insulin secretion." Presented by Weston Elison
44. 2021 Utah Conference of Undergraduate Research, Virtual: "The effects of Nr4a1 on insulin secretion." Presented by Drake Watkins
45. 2021 Utah Conference of Undergraduate Research, Virtual: "The role of reactive oxygen species in limited Nkx6.1 synthesis and translocation." Presented by Jared Wieland.
46. 2021 Utah Conference of Undergraduate Research, Virtual: "Nkx6.1 overexpression restores beta cell functionality under glucolipotoxic conditions." Presented by Kristopher Wieland
47. 2021 Utah Conference of Undergraduate Research, Virtual: "The effect of Nr4a3 on insulin secretion." Presented by Peter Ellsworth
48. 2021 Utah Conference of Undergraduate Research, Virtual: "Beta cell reduced proliferation under glucolipotoxic conditions are exacerbated by prolonged TMAO supplementation." Presented by Kacie Russon
49. 2021 Utah Conference of Undergraduate Research, Virtual: "Beta cell replication through Nkx6.1" Presented by Connor Littlefield
50. 2021 Utah Conference of Undergraduate Research, Virtual: "Do cocoa flavanol metabolites induce proliferation and protect against apoptosis in pancreatic beta cells?" Presented by Chad Mourino
51. 2021 Western Regional Islet Study Group, Talk: "Sex Specific Effects of Nr4a1 in the Beta Cell." Presented by Jacob Herring
52. 2021 Western Regional Islet Study Group, Talk: "Identifying the Nkx6.1 Interactome in Beta Cells." Presented by Connor Littlefield.
53. 2021 Annual Nutrition Science Meeting, Poster: "Gut Metabolite Trimethylamine N-Oxide Protects beta cell insulin secretion by reducing oxidative stress and maintaining insulin granule formation." Presented by Emily Krueger
54. 2020 Roseman University Research Conference, Poster: "Evaluating the role of orphan nuclear receptor Nr4a1 in mice." Presented by Brennan Leininger
55. 2020 Utah Conference of Undergraduate Research, Talk: "Supplemental treatment options for diabetes: how flavanol metabolites improve beta cell function." Presented by Andrew Barlow.
56. 2020 Utah Conference of Undergraduate Research, Poster: "Effects of grape seed extract metabolites on beta cell proliferation and function." Presented by Joseph Beales

57. 2020 Utah Conference of Undergraduate Research, Talk: "Effect of flavanols on beta cell proliferation." Presented by Trevor Lloyd
58. 2020 Utah Conference of Undergraduate Research, Poster: "Genome wide CRISPR-Cas9 Screen Identifies Genes Required for beta cell survival of metabolic stressors." Presented by Idongesit Ekpo
59. 2020 Utah Conference of Undergraduate Research, Talk: "The effects of glucolipotoxicity on Nkx6.1 expression and insulin secretion in the beta cell." Presented by Weston Elison
60. 2020 Utah Conference of Undergraduate Research, Talk: "Evaluating the Knockout Effects of Nr4a1 and Nr4a3 on the delta cell of the pancreas". Presented by Kavan Hess
61. 2020 Utah Conference of Undergraduate Research, Talk: "Supplemental treatment option for diabetes: How DHE induces Nr4a1 Expression and subsequent beta cell function. Presented by Nathan Brown
62. 2020 Utah Conference of Undergraduate Research, Talk: "The effects of IL-1B on Nf-KB and ICAM1 mechanism." Presented by Kyle Hendricks
63. 2020 Utah Conference of Undergraduate Research, Talk: "The effect of Nr4a3 gene deletion on body glucose levels, and glucose tolerance in mice." Presented by Haokun Yang
64. 2020 Utah Conference of Undergraduate Research, Poster: "The beta cell struggle: How CDKIs and Age affect proliferation in Type 1 Diabetes." Presented by Daelin Jensen
65. 2020 Utah Conference of Undergraduate Research, Poster: "High-Fat diet induces Nr4a3 Dependent Decrease in Respiratory Capacity of Mouse Soleus Muscle." Presented by Nathan Marchant
66. 2020 Utah Conference of Undergraduate Research, Talk: "Changes in Islet Morphology Over the Axis of Age." Presented by Talon Aitken
67. 2020 Utah Conference of Undergraduate Research, Talk: "Cocoa epicatechin metabolites' effect on beta cell proliferation and cell cycle." Presented by Mimi Ross
68. 2020 Utah Conference of Undergraduate Research, Poster: "Beta Cell Heterogeneity: Nkx6.1 binding partners." Presented by Connor Littlefield
69. 2020 Utah Conference of Undergraduate Research, Poster: "Age dependent molecular effects of cyclin dependent kinase inhibitors on beta cell proliferation." Presented by Melanie Baxter
70. 2020 Experimental Biology, Poster: "Why Does Nkx6.1 Fail to Increase Beta-Cell Mass in Aged Islets?" Presented by Jackie Crabtree
71. 2020 Experimental Biology, Poster: "Screening Phytochemicals for Alternative Diabetes Treatment" Presented by Emily Krueger
72. 2020 Experimental Biology, Poster: "Full Body Loss of the Nuclear Hormone Receptor Nr4a3 results in induced obesity and glucose intolerance" Presented by Haokun Yang
73. 2020 Experimental Biology, Poster: "Supplemental Treatment Options for Diabetes; How flavanol metabolites improve beta cell function" Presented by Trevor Lloyd
74. 2020 Keystone Symposia-Advances in Islet Biology, Poster: "Sex specific effects of Nr4a1 on functional beta cell mass" Presented by Jacob Herring
75. 2019 Utah Conference of Undergraduate Research, Poster: "Of Mice and Men and Differing Nr4a1 Beta Cell KO Function Between the Sexes." Presented by Kavan Hess
76. 2019 Utah Conference of Undergraduate Research, Poster: "Do these islets make me look fat? How Pancreatic Tissue Changes with Age." Presented by Bailey Benson

77. 2019 Utah Conference of Undergraduate Research, Talk: "Determining the role of CEBPa in functional beta cell mass." Presented by Courtney Smith
78. 2019 Utah Conference of Undergraduate Research, Talk: "Effects of Elevated Fatty Acids on Beta Cell Function." Presented by Weston Elison
79. 2019 Utah Conference of Undergraduate Research, Talk: "Effects of Cocoa Epicatechin Fractions on Beta Cell Mitochondrial Respiration." Presented by Lauren Manwaring
80. 2019 Utah Conference of Undergraduate Research, Talk: "The effects of cocoa metabolites on beta cell proliferation and survival." Presented by Brooke Smyth
81. 2019 Utah Conference of Undergraduate Research, Talk "Increasing beta cell mass through proliferation." Presented by Aaron Leifer
82. 2019 Utah Conference of Undergraduate Research, Talk: "Cocoa epicatechin metabolites effect on beta cell mitochondrial respiration." Presented by Mimi Ross
83. 2019 Utah Conference of Undergraduate Research, Talk: "Effects of Oleate on pancreatic beta cell proliferation." Presented by Andrew Barlow
84. 2019 Utah Conference of Undergraduate Research, Poster: "The Expression Differences of Cyclin Dependent Kinase Inhibitors in Aged and Young Pancreatic Beta Cells." Presented by Talon Aitken
85. 2019 Utah Conference of Undergraduate Research, Poster: "The effects of cocoa flavanols on beta cell proliferation and survival." Presented by Matthew Austin
86. 2019 Utah Conference of Undergraduate Research, Poster: "The effect of Nr4a3 Deletion on Blood Glucose Levels, Weight Gain, and Glucose Tolerance." Presented by Adam Wynn
87. 2019 Utah Conference of Undergraduate Research, Poster: "The effect of hyperlipidemia on Pancreatic Beta Cells" Presented by Nathan Brown
88. 2019 Utah Conference of Undergraduate Research, Poster: "Does overexpression of key transcription factors increase functional beta cell mass?" Presented by Kyle Hendricks
89. 2019 Utah Conference of Undergraduate Research, Poster: "The Expression of Cyclin Dependent Kinases in Pancreatic Beta Cells." Presented by Daelin Jensen
90. 2019 Utah Conference of Undergraduate Research, Talk: "Why do aged beta cells not replicate in response to Nkx6.1? The search for Nkx6.1 binding partners" Presented by Nathanael Jensen
91. 2019 Utah Conference of Undergraduate Research, Talk: "Defining Nkx6.1 binding sites in young and aged beta cells." Presented by Jackie Crabtree
92. 2019 Utah Conference of Undergraduate Research, Talk: "What role does palmitate play in diabetes? Presented by Trevor Lloyd
93. 2019 Utah Conference of Undergraduate Research, Poster: "The effect of cocoa epicatechin metabolites on mitochondrial respiration." Presented by Moroni Lopez
94. 2019 Experimental Biology, Poster: "Gender specific effects of Nr4a1 on functional β -cell mass." Presented by Jacob Herring
95. 2019 Experimental Biology, Poster: "The Effect of Cocoa Flavanols and Metabolites on β -cell Proliferation and Survival." Presented by Matthew Austin
96. 2019 Experimental Biology, Poster: "Defining the role of CEBP/ α in Functional β -cell mass." Presented by Courtney Smith
97. 2018 Utah Conference of Undergraduate Research, Poster: "Does Nkx2.2 enhance functional beta cell mass?" Presented by Jasmine Banner
98. 2018 Utah Conference of Undergraduate Research, Poster: "MafA's ability to enhance beta cell function." Presented by Trevor Lloyd

99. 2018 Utah Conference of Undergraduate Research, Poster: "Does Pdx1 Enhance Functional beta cell mass." Presented by Collin Christensen
100. 2018 Utah Conference of Undergraduate Research, Poster: "Does NeuroD1 enhance functional beta cell mass". Presented by Kenny Call
101. 2018 Utah Conference of Undergraduate Research, Talk: "MafA's ability to enhance beta cell function." Presented by Aaron Leifer
102. 2018 Utah Conference of Undergraduate Research, Poster: "Function of KLF14 in the beta cell." Presented by Matthew Austin
103. 2018 Utah Conference of Undergraduate Research, Poster: "Barriers to the proliferation of aged beta cells through overexpression of Nkx6.1" Presented by Jackie Crabtree
104. 2018 Utah Conference of Undergraduate Research, Poster: "Beta cell proliferation inhibition and histone modification" Presented by Nathan Jensen
105. 2018 Utah Conference of Undergraduate Research, Poster: "Cyclin Dependent Kinase inhibitors play a role in blocking beta cell proliferation." Presented by Talon Aitken
106. 2018 Utah Conference of Undergraduate Research, Talk: "Barriers to the proliferation of aged beta cells through overexpression of Nkx6.1" Presented by Parker Booren
107. 2018 Utah Conference of Undergraduate Research, Poster: "The effect of palmitate on beta cell insulin secretion." Presented by Andrew Barlow
108. 2018 Utah Conference of Undergraduate Research, Poster: "Molecular Mechanisms of Beta Cell Adaptation to Hyperlipidemia." Presented by Mason Poffenbarger
109. 2018 Utah Conference of Undergraduate Research, Poster "Deletion of Nr4a nuclear receptors on beta cells in hyperlipidemia." Presented by Weston Elison
110. 2018 Utah Conference of Undergraduate Research, Poster "The effects of microbial metabolites on beta cell proliferation and cell survival." Presented by Mimi Ross
111. 2018 Utah Conference of Undergraduate Research, Poster "The effects of cocoa flavanols on beta cell survival." Presented by Lauren Manwaring
112. 2018 Utah Conference of Undergraduate Research, Poster "Identifying the effects of cocoa flavanols on cellular respiration in beta cells." Presented by Brooke Smyth
113. 2018 Utah Conference of Undergraduate Research, Poster "The effects of cocoa flavanol metabolites on beta cell insulin secretion." Presented by Matthew Austin
114. 2018 Utah Conference of Undergraduate Research, Poster "The effect of monomeric, oligomeric and polymeric cocoa flavanols on beta cell proliferation." Presented by Moroni Lopez
115. 2018 Utah Conference of Undergraduate Research, Talk "The effects of Nr4a1 deletion in a high-fat environment on blood glucose levels and weight." Presented by Adam Wynn
116. 2018 Utah Conference of Undergraduate Research, Talk "Defining the interaction between HDAC1 and p15 regulators on beta cell proliferation." Presented by Courtney Smith
117. 2018 Utah Conference of Undergraduate Research, Talk "The effects of Nr4a1 full body knockout in mice." Presented by Kyle Kener
118. 2018 American Diabetes Association, Poster: "Nr4a1 and Nr4a3 Knock Out Mice Have Impaired Glucose Clearance and Beta-cell function under high fat feeding." Presented by Courtney Smith
119. 2018 Experimental Biology, Talk: "Molecular Mechanisms of Beta Cell Adaptation to Hyperlipidemia." Presented by Mason Poffenbarger

120. 2018 Experimental Biology, Poster: "MafB Overexpression Enhances Functional Beta Cell Mass." Presented by Aaron Leifer
121. 2018 Experimental Biology, Poster: "High fat fed Nr4a1 knock out mouse has significant modulation of mitochondrial respiration across various tissues." Presented by Adam Wynn
122. 2018 Experimental Biology, Poster: "The expression differences of cyclin dependent kinase inhibitors in aged and young pancreatic beta cells." Presented by Talon Aitken
123. 2017 Utah Conference of Undergraduate Research, Poster
124. 2017 Experimental Biology, Poster: "Beta hydroxybutyrate favorably alters beta cell survival and mitochondrial bioenergetics." Presented by Daniel Lathen
125. 2017 Experimental Biology, Poster: "Determining the role of CEBP/a in functional beta cell mass." Presented by Kyle Kener
126. 2016 Utah Conference of Undergraduate Research, Talk "Defining the role of Nr4a3 in beta cell function." Presented by Kyle Kener
127. 2016 Utah Conference of Undergraduate Research, Poster "The role of KLF14 in beta cell survival and proliferation." Presented by Ben Jack
128. 2016 Utah Conference of Undergraduate Research, Talk "Role of c-fos in functional beta cell mass." Presented by Jason Ray
129. 2016 Utah Conference of Undergraduate Research, Talk "Role of Nr4a3 in functional beta cell mass." Presented by Kyle Kener
130. 2016 Utah Conference of Undergraduate Research, Poster "Beta cell adaptations to elevated palmitate concentrations." Presented by Daniel Lathen
131. 2016 Utah Conference of Undergraduate Research, Poster "The role of betatrophin in the beta cell proliferation pathway." Presented by Sam Grover
132. 2016 Utah Conference of Undergraduate Research, Poster "Overexpression of HDAC1 induces functional beta cell mass." Presented by Amanda Haines
133. 2016 Utah Conference of Undergraduate Research, Poster "Determining the mechanism of cocoa derived epicatechins enhancement of glucose stimulated insulin secretion." Presented by Ben Bitner
134. 2016 Utah Conference of Undergraduate Research, Poster "Investigating Nr4a transcription factor binding in beta cells." Presented by Emily Barrett
135. 2016 Experimental Biology, Poster: "Overexpression of HDAC1 induces functional beta cell mass." Presented by Carrie Draney
136. 2016 Experimental Biology, Poster: "Monomeric Cocoa Procyanidins enhance functional Beta Cell Mass." Presented by Tommy Rowley
137. 2016 Experimental Biology, Poster: "Aged Islets are Refractory to Nkx6.1 mediated beta cell proliferation." Presented by Brent Wright
138. 2015 Utah Conference of Undergraduate Research, Poster "The role of palmitate in upregulating Nr4a1 and Nr4a3." Presented by Jordan Tingey
139. 2015 Utah Conference of Undergraduate Research, Poster "C-fos protects beta cells from apoptosis." Presented by Jason Ray
140. 2015 Utah Conference of Undergraduate Research, Poster "c-fos regulation of glucose stimulated insulin secretion in beta cells." Presented by Ben Bitner
141. 2015 Utah Conference of Undergraduate Research, Poster "c-fos and beta cell proliferation." Presented by Kyle Kener
142. 2015 Utah Conference of Undergraduate Research, Poster "The role of cdk2, cyclin E1, and CIP/KIP inhibitors in aged islets." Presented by Brent Wright

143. 2015 Utah Conference of Undergraduate Research, Poster “Aurora kinase A is critical for the Nkx6.1 mediated beta cell proliferation pathway.” Present by Amanda Haines.
144. 2015 Utah Conference of Undergraduate Research, Poster “Overexpression of Cdk5r1 and not Cdk5 induces beta cell proliferation.” Presented by Carrie Draney
145. 2015 Experimental Biology, Poster: “Expression of Cdk5r1, and not Cdk5, induces primary beta cell proliferation” Presented by Ben Bitner
146. 2015 Experimental Biology, Poster: “c-Fos increases functional beta cell mass” Presented by Jason Ray

G. Funding

Current External Funding

1. NIH, NIDDK [R15DK12483501A1] Title: Sex dependent function of the orphan nuclear receptor Nr4a1 in the pancreatic beta cell during Type 2 Diabetes. Term: 06/01/21-05/31/25 Total Costs: \$300,000. Role on Project: P.I.

Current Internal Funding

1. Emmeline B. Wells Grant: Effect of β -cell loss of Nr4a1 on gestational diabetes. Term: 01/01/25-03/01/27. Total Costs: \$30,000. Role on Project: P.I.
2. Bobbitt Kidney Grant: Defining the role of Nr4a1 transcriptional activity in diabetic kidney disease. Term: 01/01/25-01/01/26. Total Costs: \$20,000. Role on Project: P.I.
3. BYU Gerontology Grant: Defining the role of Nr4a1 in aging induced beta cell dysfunction and senescence. Term: 01/01/25-01/01/26. Total Costs: \$9,000. Role on Project: P.I.
4. Life Science IDR Grant: The Role of NR4A3 In Exercise-Induced Skeletal Muscle and Adipose Tissue Adaptation. Adaptation. Term: 01/01/25-01/01/26. Total Costs: \$30,000. Role on Project: CO-P.I.
5. Grants on the Edge: Defining the role of protein phosphatase m1K in pancreatic beta cell function. Term 5/01/2023-4/30/2025. Total Costs: \$10,000. Role on Project: P.I.
6. Grants on the Edge: The role of the nuclear receptor Nr4a1 in pregnancy and postpartum adaptation of the pancreatic beta-cell. Term 8/02/2024-8/01/2026. Total Costs: \$15,000. Role on Project: P.I.

External Funding Under Review

1. NIH, NIDDK [R15DK144832-01] Title: Nr4a1 and the expansion of functional beta cell mass. Term: 06/01/25-05/31/28 Total Costs: \$300,000. Role on Project: P.I.
2. NIH, NIDDK [R01DK146782-01] Title: Role of Mef2 transcription factors in the beta cell. Term: 06/01/25-05/31/30 Total Costs to BYU: \$500,000. Role on Project: Co-I.

Completed External Funding

1. United States Department of Agriculture-Agriculture and Food Research Initiative [2020-67017-30846] Title: Bioavailable gut microbial metabolites potentiate the beta-cell stimulatory and anti-obesity activities of poorly bioavailable cocoa flavanols. Term: 07/01/20-06/30/24 Total Costs: \$300,000. Role on Project: co-P.I.
2. Beatson Foundation [2019-003] Title: Are all beta cells equal? Defining heterogeneity in human beta cells. Term: 07/01/19-12/31/21 Total Costs: \$200,000. Role on Project: P.I.

3. Integrated Islet Dispersal Program Islet Award Initiative, Title: Exploring mechanism by which beta cell heterogeneity effects beta cell proliferation. Term: 06/05/18-06/04/20. Total Costs: Although no moneys are being delivered, Dr. Tessem's lab will receive 100,000 human islet equivalents from the IIDP without any subscription cost (grant in kind). Role on Project: P.I.
4. Diabetes Action Research and Education Foundation Research Grant, Title: exploring the mechanism by which gut microbiome derived epicatechin metabolites enhance beta cell function, survival, and proliferation. Term: 01/01/19-12/31/20 Total Costs: \$40,000. Role on Project: P.I.
5. American Diabetes Association Innovation Grant, Title: Nutritional regulation of Nr4a1 in the β -cell. Term: 01/01/17-12/31/19. Total Costs: \$345,000. Role on Project: P.I.
6. Diabetes Action Research and Education Foundation Research Grant, Title: Effects of cocoa epicatechins on beta cell growth, survival, and function. Term: 01/01/17-12/31/18. Total Costs: \$40,000. Role on Project: P.I.
7. American Diabetes Association ADA/Takeda postdoctoral fellowship, Title: Novel pathways for the expansion of functional beta cell mass. Term: 08/01/2010-2012.
8. Juvenile Diabetes Research Foundation postdoctoral fellowship, Title: Role of Nkx6.1 in modulation of islet beta-cell cycle control. Term 09/01/2008-2010.
9. Predoctoral Institutional Training Grant (T32), Predoctoral training program in molecular biology, National Institute of General Medical Sciences, National Institutes of Health, 2002-204

Completed Internal Funding

1. Grants on the Edge: Defining the role of the orphan nuclear receptor Nr4a3 in White Adipose Beiging. Term 12/01/2022-11/30/2024. Total Costs: \$15,000. Role on Project: P.I.
2. College Mentoring Research Award. Term 11/01/2020-10/31/2022 Total Costs: \$5,000. Role on Project: P.I.
3. Grants on the Edge: Defining sex mediated differences of Nr4a1 function in the pancreatic beta cell. Term 12/01/2020-11/30/2022. Total Costs: \$15,000
4. BYU Mentoring Environment Grant, Title: Validating monomeric cocoa epicatechin as a treatment for pre-diabetes: translating cellular data to a rodent model.: 01/01/18-12/31/20. Total Costs: \$20,000. Role on Project: P.I.
5. BYU James Bobbitt Kidney Disease Award, Title: Defining the Role of Nr4a3 mediated mitochondrial function in diabetic kidney disease.: 01/01/18-12/31/20. Total Costs: \$13,000. Role on Project: P.I.
6. BYU James Bobbitt Heart Disease Award, Title: Determining the role of Nr4a1 in cardiomyocyte metabolism and remodeling during heart failure.: 01/01/18-12/31/20. Total Costs: \$13,000. Role on Project: Co-P.I.
7. BYU Graduate Mentoring Award, Title: Nutrient control of Nr4a1 mediated gene transcription.: 01/01/18-12/31/20. Total Costs: \$15,000. Role on Project: P.I.
8. BYU Mentoring Environment Grant, Title: Effects of Nr4a3 deletion on functional beta cell mass. Term: 01/01/16-12/31/17. Total Costs: \$20,000. Role on Project: P.I.
9. BYU Bobbitt Kidney Grant, Title: Defining the role of Nr4a1 mediated mitochondrial function in diabetic kidney disease. Term: 01/01/17-12/31/17. Total Costs: \$15,000. Role on Project: P.I.
10. BYU Life Sciences College Grants on the Edge, Title: Nutritional Regulation of Nr4a1 in the beta cell. Term: 09/01/16-09/01/17. Total Costs: \$30,000. Role on Project: P.I.

11. BYU Mentoring Environment Grant, Title: The role of Nr4a1 in maternal obesity induced β -cell expansion. Term: 01/01/15-12/31/16. Total Costs: \$20,000. Role on Project: P.I.
12. BYU Andersen Diabetes Grant, Title: The role of Nr4a1 in maternal obesity induced β -cell expansion. Term: 01/01/15-12/31/15. Total Costs: \$2,000. Role on Project: P.I.

Unfunded External Grants (2019-Present)

1. 2022: Human Islet Research Network/NIDDK, Title: Defining the interactome of key beta cell transcription factors to enhance beta cell replication. Role on Project: P.I.
2. 2021: Department of Defense Health Program Congressionally Directed Medical Research Program Discovery Award, Title: Defining the role of Nr4a3 in white adipose beiging. Role on Project: P.I.
3. 2021: NIH/NIDDK R01, Title: Defining the role of protein phosphatase M1K in pancreatic beta cell function. Role on Project: Co-P.I.
4. 2020: Department of Defense Health Program Congressionally Directed Medical Research Program Discovery Award, Title: Defining the mechanism by which the orphan nuclear receptor Nr4a3 controls obesity and type 2 diabetes progression. Role on Project: P.I.
5. 2019: American Diabetes Association Innovative Basic Science Award, Title: The effects of sex and nutrients on Nr4a1 function in the beta cell. Role on Project: P.I.
6. 2019: NIH/NIDDK R15, Title: Defining sex mediated differences of Nr4a1 function in the pancreatic beta cell. Role on Project: P.I.
7. 2019: NIH/NIDDK R15, Title: Understanding the role of Nr4a3 in obesity and diabetes progression. Role on Project: P.I.
8. Juvenile Diabetes Research Foundation Strategic Research Agreement, Title: Exploring mechanisms by which beta cell heterogeneity affects Nkx6.1 mediated proliferation.

Unfunded Internal Grants (2019-Present)

1. 2024: BYU Widtsoe award, Title: Exploring Nr4a1's ability to expand functional beta cell mass
2. 2022: BYU Gerontology Program, Title: Exploring the role of age-related beta cell Mef2D loss on functional beta cell mass. Role on Project: P.I.
3. 2019: BYU Interdisciplinary research award, Title: Some are more equal than others- Exploring mechanisms by which beta cell heterogeneity effects beta cell replication as a treatment for diabetes. Role on Project: P.I.
4. 2019: BYU Widtsoe award, Title: Obesity Gene? Understanding how Nr4a3 loss causes obesity and glucose intolerance.

Mentored Student Funding

1. 2024-2025 CURA Grant, Title: Role of Sirt7 in Deacetylation of Nkx6.1. Total Cost: \$4,000. Awardee: Trevor Kendrick. Role on Award: Research Mentor.
2. 2024-2025 CURA Grant, Title: Effects of Cytosporone B on β -Cell proliferation and insulin secretion. Total Cost: \$4,000. Awardee: Brigham Blackwell. Role on Award: Research Mentor.
3. 2024-2025 CURA Grant, Title: Effects of cDIM-OH on Beta Cell Nr4a1 Expression and Function. Total Cost: \$4,000. Awardee: Sara Rapp. Role on Award: Research Mentor.
4. 2024-2025 CURA Grant, Title: The Role of Nr4a1 in β -Cell Adaptation and Glucose Homeostasis During Pregnancy. Total Cost: \$4,000. Awardee: Eden Beazer. Role on Award: Research Mentor.

5. 2024-2025 CURA Grant, Title: Nr4a1 as a mediator of functional beta cell mass in Type I and Type II diabetes. Total Cost: \$4,000. Awardee: Aubree Bench. Role on Award: Research Mentor.
6. 2024-2025 Anderson Diabetes Grant, Title: Defining Binding Partners of Transcription Factor Nr4a3. Total Cost: \$4,000. Awardee: Luki Benavente. Role on Award: Research Mentor.
7. 2024-2025 CURA Grant, Title: Exploring the ability of Harmine to induce Nr4a1 mediated beta cell expansion. Total Cost: \$4,000. Awardee: Andrew Steadman. Role on Award: Research Mentor.
8. 2024-2025 CURA Grant, Title: The Effects of Alprostadil on Beta-Cell Nr4a1 Expression and Activity. Total Cost: \$4,000. Awardee: Kyla King. Role on Award: Research Mentor.
9. 2024-2025 CURA Grant, Title: Effects of saturated and unsaturated fatty acids on functional β -Cell mass. Total Cost: \$4,000. Awardee: Kyla King. Role on Award: Research Mentor.
10. 2023-2024 CURA Grant, Title: Investigating the effect of diabetes-linked elevated glucose concentration on Nkx6.1- Pdx1 mediated transcriptional programs in beta cells. Total Cost: \$4,000. Awardee: Nathan Vaughn. Role on Award: Research Mentor.
11. 2023-2024 CURA Grant, Title: Exploring the Protein-Protein Binding Between Key Beta Cell Transcription Factor Nkx6.1 and PACS1 in Beta-cell function. Total Cost: \$4,000. Awardee: Spencer Paulsen. Role on Award: Research Mentor.
12. 2023-2024 CURA Grant, Title: The effects of epicatechin and its microbial metabolites on differing pathways of beta cell death in type 1 and type 2 diabetes. Total Cost: \$4,000. Awardee: Aubree Bench. Role on Award: Research Mentor.
13. 2023-2024 CURA Grant, Title: Exploring the Bioactivity of Epicatechin and its Metabolites on Beta-Cell Function under GLT Conditions. Total Cost: \$4,000. Awardee: Eden Beazer. Role on Award: Research Mentor.
14. 2023-2024 Andersen Diabetes Grant, Title: Hyperglycemic Conditions Downregulate Essential Nkx6. 1 Expression in Beta Cells. Total Cost: \$4,000. Awardee: Jared Wieland. Role on Award: Research Mentor.
15. 2022-2023 CURA Grant, Title: The protective and proliferative role of CEBP α in Ins-1 832/13 beta cells and primary rat islets. Total Cost: \$4,000. Awardee: Peter Ellsworth. Role on Award: Research Mentor.
16. 2022-2023 CURA Grant, Title: Treatment of Ins-1 Beta Cells with Oleate Affect the Expression of The Glycolytic Downstream Targets of Nr4a1 and Nr4a3 and Insulin Secretion. Total Cost: \$4,000. Awardee: Emily Hill. Role on Award: Research Mentor.
17. 2022-2023 CURA Grant, Title: The Postprandial Induction of the Nr4a Transcription Factors is Essential for GSIS. Total Cost: \$4,000. Awardee: Jordan Johns. Role on Award: Research Mentor.
18. 2022-2023 CURA Grant, Title: Elevated Blood Glucose Levels Negatively Regulates Nkx6.1 Level in the Pancreatic Beta Cell. Total Cost: \$4,000. Awardee: Kristopher Wieland. Role on Award: Research Mentor.
19. 2022-2023 CURA Grant, Title: Discovering effects of Fatty Acids on Nr4a1-NBRE interactions. Total Cost: \$4,000. Awardee: Alex Benbrook. Role on Award: Research Mentor.
20. 2022-2023 CURA Grant, Title: Adverse effects of global Nr4a3 knockout in mice on glucose sensitivity and adipose depot. Total Cost: \$4,000. Awardee: Jared Carter. Role on Award: Research Mentor.
21. 2022-2023 Andersen Diabetes Grant, Title: Adrenergic receptor mediated potentiation of glucose stimulated insulin secretion is dependent on Nr4a nuclear hormone receptor

- expression. Total Cost: \$4,000. Awardees: Nathan Vaughan and Peter Ellsworth. Role on Award: Research Mentor.
22. 2021-2022 CURA Grant, Title: The Deleterious Effects of Nr4a3 Full Body Knockouts on Adipose Tissue. Total Cost: \$3,000. Awardee: Peter Ellsworth. Role on Award: Research Mentor.
 23. 2021-2022 CURA Grant, Title: Exploring the Effects of Fatty Acids on Nr4a1 Binding. Total Cost: \$3,000. Awardee: Olivia S. Grinnell-Egan. Role on Award: Research Mentor.
 24. 2021-2022 CURA Grant, Title: Genome-wide CRISPR-Cas9 Screen Identifies Genes Required for Beta cell Survival or Metabolic Stressors. Total Cost: \$3,000. Awardee: Kelson Knighton. Role on Award: Research Mentor.
 25. 2021-2022 CURA Grant, Title: TMAO directly interacts with the IRE1a receptor to promote insulin secretion through ER chaperones. Total Cost: \$3,000. Awardee: Jordan Davis. Role on Award: Research Mentor.
 26. 2021-2022 CURA Grant, Title: The effect of cocoa metabolites on alpha cell function. Total Cost: \$3,000. Awardee: Ethan Crawford. Role on Award: Research Mentor.
 27. 2021-2022 CURA Grant, Title: Hyperglycemia impairs insulin production and secretion by Nkx6.1 translocation via reactive oxygen species. Total Cost: \$3,000. Awardee: Kristopher Wieland. Role on Award: Research Mentor.
 28. 2021-2022 CURA Grant, Title: The role of Mef2d in the pancreatic beta cell. Total Cost: \$3,000. Awardee: James Holman. Role on Award: Research Mentor.
 29. 2020-2021 Gerontology Graduate Fellowship: Why don't aged beta cells replicate. Total Cost: \$3,000. Awardee: Jackie Crabtree. Role on the Award: Graduate Mentor.
 30. 2020-2021 CURA Grant, Title: The Effects of Nr4a1 and Nr4a3 on Insulin Secretion. Total Cost: \$3,000. Awardee: Peter Ellsworth. Role on Award: Research Mentor.
 31. 2020-2021 CURA Grant, Title: Chronic Exposure to Hyperglycemia Impairs Insulin Secretion by Downregulating Nkx6.1 Expression via Reactive Oxygen Species. Total Cost: \$3,000. Awardee: Kristopher Wieland. Role on Award: Research Mentor.
 32. 2020-2021 CURA Grant, Title: Beta cell apoptosis and reduced proliferation under glucolipotoxic conditions exacerbated by prolonged TMAO supplementation. Total Cost: \$3,000. Awardee: Joseph Beales. Role on Award: Research Mentor.
 33. 2020-2021 CURA Grant, Title: Cocoa epicatechin metabolites enhance beta cell proliferation and protect against apoptosis to improve diabetes. Total Cost: \$3,000. Awardee: Chad Mourino. Role on Award: Research Mentor.
 34. 2020-2021 CURA Grant, Title: Exploring the effects of Oleate on Nr4a1 Transcriptional Activity and Binding. Total Cost: \$3,000. Awardee: Kyle Hendricks. Role on Award: Research Mentor.
 35. 2020-2021 CURA Grant, Title: Determining Nkx6.1 interacting factors. Total Cost: \$3,000. Awardee: Connor Littlefield. Role on Award: Research Mentor.
 36. 2019-2020 CURA Grant, Title: Supplemental treatment options for diabetes: how flavanol metabolites improve β -cell function. Total Cost: \$3,000. Awardee: Trevor Lloyd. Role on Award: Research Mentor.
 37. 2019-2020 CURA Grant, Title: Age-Related Molecular and Morphological Changes Impair Beta Cell Proliferation. Total Cost: \$3,000. Awardee: Daelin Jensen. Role on Award: Research Mentor.
 38. 2019-2020 CURA Grant, Title: Cocoa metabolites regulation of the beta-cell cycle. Total Cost: \$3,000. Awardee: Joseph Beales. Role on Award: Research Mentor.
 39. 2019-2020 CURA Grant, Title: Fat Makes the Insulin Go Splat, But Where's the Nr4a1 At? : Exploring the Effect of Fatty Acid on Nr4a1 Transcription Regulation. Total Cost: \$3,000. Awardee: Kavan Hess. Role on Award: Research Mentor.

40. 2019-2020 CURA Grant, Title: Genome-wide CRISPR-Cas9 Screen Identifies Genes Required for β -cell Survival of Metabolic Stressors. Total Cost: \$3,000. Awardee: Kyle Hendricks. Role on Award: Research Mentor.
41. 2019-2020 CURA Grant, Title: Nkx6.1 Alterations and the Pathogenesis of Type 2 Diabetes. Total Cost: \$3,000. Awardee: Weston Elison. Role on Award: Research Mentor.
42. 2018-2019 CURA Grant, Title: Exploring cocoa epicatechin ability to induce functional beta cell mass. Total Cost: \$3,000. Awardee: Mimi Ross Austin. Role on Award: Research Mentor.
43. 2018-2019 CURA Grant, Title: Expression of cell cycle inhibitors in aged pancreatic beta cells. Total Cost: \$3,000. Awardee: Talon Aitken. Role on Award: Research Mentor.
44. 2018-2019 CURA Grant, Title: Changes in Nkx6.1 binding partners as a function of aging. Total Cost: \$3,000. Awardee: Nathan Jensen. Role on Award: Research Mentor.
45. 2018-2019 CURA Grant, Title: The Role of Nr4a1 in Beta cell Growth and Type 2 Diabetic Onset. Total Cost: \$3,000. Awardee: Adam Wynn. Role on Award: Research Mentor.
46. 2018-2019 Andersen Diabetes Grant, Title: Effects of long term palmitate exposure on functional beta cell mass. Total Cost: \$1,500. Awardee: Nathan Brown. Role on Award: Research Mentor.
47. 2017-2018 ADA Minority Award, Title: Effect of Nr4a1 Deletion in adult animals. Total Cost: \$3,000. Awardee: Courtney Smith. Role on Award: Research Mentor.
48. 2017-2018 BYU ORCA Grant, Title: The Role of Nr4a1 in Beta cell Growth and Type 2 Diabetic Onset. Total Cost: \$1,500. Awardee: Matt Austin. Role on Award: Research Mentor.
49. 2017-2018 BYU ORCA Grant, Title: The Effects of Hyperlipidemia on Pancreatic Beta Cells. Total Cost: \$1,500. Awardee: Austin Ricks. Role on Award: Research Mentor.
50. 2016-2017 BYU ORCA Grant, Title: Exploring the role of MafA and MafB in Functional Beta Cell Mass. Total Cost: \$1,500. Awardee: Aaron Leifer. Role on Award: Research Mentor.
51. 2016-2017 BYU Andersen Diabetes Grant, Title: Effect of KLF14 on functional beta cell mass. Total Cost: \$1,500. Awardee: Zoey Fishburn. Role on Award: Research Mentor.
52. 2015-2016 BYU ORCA Grant, Title: The role of Nr4a1 in β -cell glucose stimulated insulin secretion and cellular survival. Total Costs: \$1,500. Awardee: Kevin Garland. Role on Award: Research Mentor.
53. 2015-2016 BYU ORCA Grant, Title: Determining the Mechanism of Cocoa-Derived Epicatechin Enhancement of Glucose Stimulated Insulin Secretion. Total Costs: \$1,500. Awardee: Benjamin Bitner. Role on Award: Research Mentor.
54. 2015-2016 BYU ORCA Grant, Title: Is HDAC1 mediated β -cell proliferation dependent on decreased p15 expression? Total Costs: \$1,500. Awardee: Amanda Hobson. Role on Award: Research Mentor.
55. 2015-2016 BYU ORCA Grant, Title: Defining the role of Nr4a3 in β -cell function by analysis of full body knockout. Total Costs: \$1,500. Awardee: Kyle Kener. Role on Award: Research Mentor.
56. 2015-2016 BYU ORCA Grant, Title: CEBP/ α and increased functional β -cell mass. Total Costs: \$1,500. Awardee: Jason Ray. Role on Award: Research Mentor.
57. 2015-2016 BYU ORCA Grant, Title: Defining Nkx6.1 binding partners in young and aged pancreatic islet. Total Costs: \$1,500. Awardee: Sean Kang. Role on Award: Research Mentor.

58. 2015-2016 BYU ORCA Grant, Title: β -cell Adaptation to Decreased Nr4a Expression in Conditions of Elevated Palmitate Concentrations (Hyperlipidemia). Total Costs: \$1,500. Awardee: Daniel Lathen. Role on Award: Research Mentor.
59. 2015-2016 BYU Andersen Diabetes Grant, Title: The role of betatrophin in the β -cell proliferation pathway. Total Costs: \$1,500. Awardee: Sam Grover. Role on Award: Research Mentor.
60. 2014-2015 BYU ORCA Grant, Title: Determining if c-Fos regulates glucose stimulated insulin secretion. Total Costs: \$1,500. Awardee: Benjamin Bitner. Role on Award: Research Mentor.
61. 2014-2015 BYU ORCA Grant, Title: The role of Cdk5r1 in beta cell survival from apoptosis. Total Costs: \$1,500. Awardee: Amanda Hobson. Role on Award: Research Mentor.
62. 2014-2015 BYU ORCA Grant, Title: Determining if c-Fos protects beta cells from apoptosis. Total Costs: \$1,500. Awardee: Kyle Kener. Role on Award: Research Mentor.
63. 2014-2015 BYU ORCA Grant, Title: The role of palmitate in upregulating Nr4a1 and Nr4a3. Total Costs: \$1,500. Awardee: Jordan Tingey. Role on Award: Research Mentor.
64. 2014-2015 BYU ORCA Grant, Title: The role of HDAC1 in increasing beta cell glucose stimulated insulin secretion and apoptosis resistance. Total Costs: \$1,500. Awardee: Carrie Draney. Role on Award: Research Mentor.
65. 2013-2014 BYU ORCA Grant, Title: The role of c-Fos in increasing functional beta cell mass. Total Costs: \$1,500. Awardee: Jason Ray. Role on Award: Research Mentor.
66. 2013-2014 BYU ORCA Grant, Title: Discovery of pancreatic beta cell subpopulations. Total Costs: \$1,500. Awardee: Andrew Straford. Role on Award: Research Mentor.

Patents

1. Provisional patent 62/551,613-Use of cocoa epicatechin monomers to enhance beta cell insulin secretion as a treatment for prediabetes and type 2 diabetes.

Media

1. Blog Posts
 - 2020: American Physiology Society: I Spy Physiology Blog invited post (<https://ispyphysiology.com/2020/10/07/its-not-your-imagination-women-have-a-harder-time-losing-weight/>)
 - 2019: American Physiology Society: I Spy Physiology Blog invited post (<https://ispyphysiology.com/2019/11/26/can-intermittent-fasting-help-people-with-diabetes/>)
 - 2019: American Physiology Society: I Spy Physiology Blog invited post (<https://ispyphysiology.com/2019/05/03/spotlight-on-the-endocrine-system/>)
2. Radio Interviews
 - 2024: NPR: How sweet! A daily dose of dark chocolate may cut your risk of diabetes (<https://www.npr.org/sections/shots-health-news/2024/12/05/nx-s1-5215929/dark-chocolate-diabetes-diet-blood-pressure>)
 - 2018: BYU Radio, Top of Mind-Metabolic Syndrome: The Silent Epidemic (https://www.byuradio.org/a755c99b-a90b-4a73-b858-a0807fe797f3?utm_source=byub&utm_medium=share&utm_campaign=share_2023&utm_content=Episode)
 - 2018: BYU Radio, Top of Mind-Regrowing Beta Cells, Potential Type 1 Diabetes Treatments (<https://www.byuradio.org/bed2c2da-3e8e-4d9b-8c9c->)

- [c700afdbfe1d?utm_source=byub&utm_medium=share&utm_campaign=share_2023&utm_content=Episode](https://www.byuradio.org/fd32ba9e-eebd-4d1c-a9f1-6b70a4ab67cd?utm_source=byub&utm_medium=share&utm_campaign=share_2023&utm_content=Episode))
- 2017: BYU Radio, Top of Mind-Cocoa May Prevent Diabetes (https://www.byuradio.org/fd32ba9e-eebd-4d1c-a9f1-6b70a4ab67cd?utm_source=byub&utm_medium=share&utm_campaign=share_2023&utm_content=Episode)
 - 2015: BYU Radio, Top of Mind-Diabetes (https://www.byuradio.org/5bdeee82-0fc4-4677-90d5-077b9ee039e4?utm_source=byub&utm_medium=share&utm_campaign=share_2023&utm_content=Episode)
3. Print/Newspaper/Websites
- 2024: NPR: How sweet! A daily dose of dark chocolate may cut your risk of diabetes (<https://www.npr.org/sections/shots-health-news/2024/12/05/nx-s1-5215929/dark-chocolate-diabetes-diet-blood-pressure>)
 - 2017: BYU Alumni Magazine, Diabetes Pro Smart Brief, Daily Universe, BYU Homepage cover story, MD Magazine, Daily Mail, Sci-News.com, Hindustan Times, Medical News Today, Reader's Digest, Johns Hopkins News, Phys.org, The New Indian Express, New Atlas, Nutra Ingredients, Diabetes.co.uk, American Journal of Pharmacy Benefits, The Citizen-South Africa, Cacao News, Tomo News Science and Technology, Express-UK, New York Post, Women's Health Letter, Kurier, Tekno Tempo, Opinion Bolivia, Fit for Fun, Science Daily, Phys.org, Correio Braziliense, nld.com.vn, vesti.ru, prostreno.cz, heilpraxisnet.de, lifestyle.okezone.com, computerhoy.com, onmed.gr, winnetnews.com, uai.com.br
 - 2016: BYU Alumni Magazine
 - 2015: BYU Alumni Magazine, Daily Herald, Daily Universe, BYU Homepage cover story
4. Television
- 2017: Utah KSL 5, Chile Mega TV, India TV

VII. CITIZENSHIP

A. Department, College, and University Citizenship Assignments

1. University J. Reuben Clark Jr. Grant Review Committee-2024-Present
2. MMBio Department Graduate Education Committee-2024-Present
3. BYU Institutional Animal Care and Use Committee Member-2022-Present
4. Life Science College Input Gathering Subcommittee Leader-2022
5. University Inspiring Learning Award Reviewer-2021-2022
6. NDFS Department Awards Committee Member-2020-2022
7. NDFS Department Graduate Seminar Coordinator-2019-2024
8. NDFS Department Graduate Education Committee-2015-2024

9. NDFS Department Honors Coordinator-2015-2024
10. BYU Diabetes Club Faculty Mentor-2015-Present
11. University WRI and Women's Grant Reviewer-2017
12. Life Science College MEG Review Committee Chair-2015
13. NDFS Department Undergraduate Education Committee-2013-2018
14. NDFS Department Seminar Committee-2013-2018
15. NDFS Department Faculty Search Committee Chair-2015-2018
16. Life Science College MEG Review Committee-2013-2017

B. Professional and Scientific Citizenship

Membership

1. Sigma Xi, The Scientific Research Honor Society
2. American Association for the Advancement of Science
3. American Diabetes Association
4. Danish Diabetes Academy
5. American Society for Biochemistry and Molecular Biology
6. American Physiology Society
7. American Society for Nutrition
8. American Heart Association

Professional Society Service

1. 2024-2025: American Diabetes Association National Islet Biology, Development, and Function Interest Group-**Immediate Past Chair**
2. 2024: American Diabetes Association **Abstract Reviewer**: 23-D Islet Biology—Signal Transduction
3. 2023-Present: American Physiology Society, Endocrinology and Metabolism Section National Steering Committee-**Program Working Group Representative**.
4. 2022-2024: American Diabetes Association National Islet Biology, Development, and Function Interest Group-**Chair**
5. 2022- Experimental Biology 2022, ASBMB undergraduate **poster competition judge**
6. 2021-2022: American Diabetes Association National Islet Biology, Development, and Function Interest Group-**Chair Elect**
7. 2020: American Diabetes Association **Abstract Reviewer**: 23-D Islet Biology—Signal Transduction
8. 2020-2023: American Physiology Society, Endocrinology and Metabolism Section National Steering Committee **Secretary-Treasurer**.
9. 2019-Present: American Society for Nutrition **Abstract Reviewer**
10. 2018-2021: American Diabetes Association National Islet Biology, Development, and Function Interest Group-**Communications Director**
11. 2018-2019: National Institute of Health Center for Scientific Review **Peer Review Project Member**

12. 2018-Present: Danish Diabetes Academy Committee for **Talent Development Member**
13. 2018-2020: American Society for Biochemistry and Molecular Biology Undergraduate **Poster Competition Judge**
14. 2017-2020: American Physiology Society **Communication Committee Member**

Conference Session Chair

1. 2024-American Diabetes Association 2024 84th Scientific Sessions, “Right on Target-Strategies to Selectively Regenerate and Protect Beta Cells”
2. 2024-American Diabetes Association 2024 84th Scientific Sessions, “Islet Signal Transduction”
3. 2024- American Physiology Summit 2024, “Hot Topics in Endocrinology and Metabolism”
4. 2023-American Diabetes Association 2023 83rd Scientific Sessions, “Alpha, Beta and Delta Cells of the Islets-More than Just Neighbors”
5. 2023-American Physiology Summit 2023, “Trending Topics in Endocrinology and Metabolism”
6. 2022-American Diabetes Association 2022 82nd Scientific Sessions, “Influence of the Extracellular Matrix on Islet Function and Survival”
7. 2022-Experimental Biology 2022, “Endocrinology and Metabolism: New Investigator and Research Recognition Award Session”
8. 2019-Western Regional Islet Study Group 2019, “Regulation of insulin, glucagon, and somatostatin secretion”
9. 2019-American Diabetes Association 2019 79th Scientific Sessions, “Innovations in Islet Biology”

Grant Reviewer

1. 2024-Present Permanent Member, National Institute of Health, National Institute of Diabetes and Digestive and Kidney Diseases, Diabetes, Endocrinology, and Metabolic Diseases B (DDK-B) Study Section
2. 2024- Ad Hoc Reviewer, Washington University Diabetes Research Center Pilot and Feasibility Grant
3. 2022, 2023-Ad Hoc Reviewer, National Institute of Health, National Institute of Diabetes and Digestive and Kidney Diseases, Diabetes, Endocrinology, and Metabolic Diseases B (DDK-B) Study Section
4. 2022-Ad Hoc Reviewer, National Institute of Health, National Institute of Diabetes and Digestive and Kidney Diseases, Cell Signaling and Molecular Endocrinology Study Section
5. 2022, 2023-Ad Hoc Reviewer, Integrated Islet Distribution Program, Islet Award Initiative Reviewer
6. 2018-Ad Hoc Reviewer, Czech Science Foundation
7. 2018, 2019, 2020, 2021, 2022-Grant Review Committee, Danish Diabetes Academy Ph.D. student and postdoctoral grant applications
8. 2018, 2019, 2020, 2021, 2022-Ad Hoc Reviewer, Department of Defense Congressionally Directed Medical Research Programs
9. 2018, 2019, 2020, 2021, 2022-Ad Hoc Reviewer, Diabetes Action, Research and Education Foundation
10. 2016-Ad Hoc Reviewer, Indiana Diabetes Research Center Pilot and Feasibility Grant
11. 2016-Ad Hoc Reviewer, National Institute of Health, National Institute of Diabetes and Digestive and Kidney Diseases, Molecular and Cellular Biology Study Section

12. 2024, 2015, 2016- Ad Hoc Reviewer, Diabetes UK
13. 2013, 2015, 2018- Ad Hoc Reviewer, Juvenile Diabetes Research Foundation (JDRF FY13 SRA, FY15 SRA, FY18 SRA)

Journal Leadership

1. 2023-2024-Biology Journal, Beta Cells at the Center of Type 1 and Type 2 Diabetes, Special Issue Editor
2. 2022-Present- Frontiers in Nutrition: Nutrigenetics, review editor
3. 2021-Present-Nutrition Research, Editorial Board
4. 2021-2022- Frontiers in Endocrinology, Diabetes: Study of Pancreatic Islets Based on Human Models to Understand Pathogenesis of Diabetes, Co-Editor.
5. 2020-Present-Biology Journal, Topic Editor
6. 2020-Present-Pharmaceuticals Journal, Reviewer Board
7. 2019-Present-Frontiers in Endocrinology, Diabetes: Molecular Mechanisms, review editor
8. 2018-2019-Journal of Visual Experimentation, guest editor methods collection "Methods to measure functional beta cell mass."
9. 2017-present-Nuclear Receptor Research, editorial board

Journal Reviewer

1. 2024-present-Ad-Hoc Reviewer, Journal of Lipid Research
2. 2024-present-Ad-Hoc Reviewer, Biomedicines
3. 2024-present-Ad-Hoc Reviewer, Food Science and Human Wellness
4. 2023-present-Ad-Hoc Reviewer, Food & Function
5. 2023-present-Ad-Hoc Reviewer, Nature Communications
6. 2023-present-Ad-Hoc Reviewer, Frontiers in Endocrinology-Renal Endocrinology
7. 2023-present-Ad-Hoc Reviewer, Frontiers in Nutrition
8. 2023-present-Ad-Hoc Reviewer, BMC Endocrine Disorders
9. 2023-present-Ad-Hoc Reviewer, Acta Physiologica
10. 2022-present-Ad-Hoc Reviewer, Biochemistry and Cell Biology
11. 2022-present-Ad-Hoc Reviewer, American Journal of Physiology-Cell Physiology
12. 2022-present-Ad-Hoc Reviewer, Applied Microbiology and Biotechnology
13. 2022-present-Ad-Hoc Reviewer, Journal of Leukocyte Biology
14. 2022-present-Ad-Hoc Reviewer, Molecular Biology Reports
15. 2022-present-Ad-Hoc Reviewer, Diabetes Care
16. 2022-present-Ad-Hoc Reviewer, Journal of Clinical Investigation
17. 2022-present-Ad Hoc Reviewer, Current Developments in Nutrition
18. 2022-present-Ad Hoc Reviewer, Endocrine Research
19. 2022-present-Ad Hoc Reviewer, Journal of Physiology and Biochemistry
20. 2022-present-Ad Hoc Reviewer, Molecular Medicine
21. 2021-present-Ad Hoc Reviewer, Nutrition Research
22. 2021-present-Ad Hoc Reviewer, Scientific Reports
23. 2021-present-Ad Hoc Reviewer, Life Science Alliance
24. 2021-present-Ad Hoc Reviewer, Drug Design, Development and Therapy
25. 2021-present-Ad Hoc Reviewer, Journal of Visual Experimentation
26. 2021-present-Ad Hoc Reviewer, Cellular and Molecular Immunology
27. 2021-present-Ad Hoc Reviewer, Clinical and Translational Medicine
28. 2021-present-Ad Hoc Reviewer, Diabetes Spectrum
29. 2020-present-Ad Hoc Reviewer, Diabetologia

30. 2020-present-Ad Hoc Reviewer, Biology
31. 2020-present-Ad Hoc Reviewer, Metabolites
32. 2020-present-Ad Hoc Reviewer, Journal of Functional Foods
33. 2020-present-Ad Hoc Reviewer, International Journal of Molecular Sciences
34. 2020-present-Ad Hoc Reviewer, Acta Biochimica et Biophysica Sinica
35. 2020-present-Ad Hoc Reviewer, Genes and Genomics
36. 2020-present-Ad Hoc Reviewer, Pharmaceuticals
37. 2020-present-Ad Hoc Reviewer, Chemosphere
38. 2020-present-Ad Hoc Reviewer, Cell Cycle
39. 2020-present-Ad Hoc Reviewer, Molecular Metabolism
40. 2020-present-Ad Hoc Reviewer, American Journal of Physiology-Regulatory, Integrative and Comparative Physiology
41. 2020-present-Ad Hoc Reviewer, Biological Chemistry
42. 2019-present-Ad Hoc Reviewer, Molecular Nutrition and Food Research
43. 2019-present-Ad Hoc Reviewer, Endocrinology, Diabetes and Metabolism
44. 2019-present-Ad Hoc Reviewer, Cells
45. 2019-present-Ad Hoc Reviewer, Zeitschrift für Naturforschung C
46. 2019-present-Food Research International
47. 2019-present-Frontiers in Endocrinology-Diabetes: Molecular Mechanisms
48. 2019-present-Ad Hoc Reviewer, Molecules
49. 2019-present-Ad Hoc Reviewer, Nutrients
50. 2018-present-Ad Hoc Reviewer, Diabetes, Obesity and Metabolism
51. 2018-present-Ad Hoc Reviewer, Experimental and Clinical Endocrinology & Diabetes
52. 2018-present-Ad Hoc Reviewer, FASEB Journal
53. 2017-present-Ad Hoc Reviewer, Journal of Molecular Cell Biology
54. 2017-present-Ad Hoc Reviewer, Molecular and Cellular Endocrinology
55. 2017-present-Ad Hoc Reviewer, Oncotarget
56. 2016-present-Ad Hoc Reviewer, PLOS ONE
57. 2016-present-Ad Hoc Reviewer, Diabetes
58. 2016-present-Ad Hoc Reviewer, Journal of Molecular Cell Biology
59. 2016-present-Ad Hoc Reviewer, American Journal of Physiology-Endocrinology and Metabolism
60. 2016-present-Ad Hoc Reviewer, Nuclear Receptor Research
61. 2015-present-Ad Hoc Reviewer, American Journal of Clinical Nutrition

Number of Journal Peer Reviews per Year

1. 2025-10 manuscripts reviewed.
2. 2024-70 manuscripts reviewed.
3. 2023-60 manuscripts reviewed.
4. 2022-46 manuscripts reviewed.
5. 2021-54 manuscripts reviewed.
6. 2020-59 manuscripts reviewed.
7. 2019-13 manuscripts reviewed.

Textbook Reviewer

1. 2017-present-Ad Hoc Reviewer, Wolters Kluwer
2. 2016-present-Ad Hoc Reviewer, Bentham Science
3. 2015-present-Ad Hoc Reviewer, Jones and Bartlett Learning