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EDUCATION

- Postdoctoral Fellow, Diabetes/Islet Biology, Duke University Medical Center, Durham, North Carolina, 2007-2013
- Ph.D., Molecular Biology, University of Colorado Health Sciences Center, Denver, Colorado, 2001-2007
- B.Sc., Microbiology, Brigham Young University, Provo, Utah, 2001

PROFESSIONAL EXPERIENCE

- Brigham Young University, Provo, UT Assistant Professor, Department of Nutrition, Dietetics and Food Science, 08/13-present
- Elon University, Elon, NC, Adjunct Assistant Professor, Department of Biology, 08/2012-07/2013
- Alamance Community College, Alamance, NC, Adjunct Assistant Professor, Department of Biology, 08/2011-08/2012
- North Carolina Central University, Durham, NC, Adjunct Assistant Professor, Department of Biology, 08/2010-08/2011
- American Journal Experts, Durham, NC, Contract copy editor, content editor and Portuguese translator, 08/2008-08/2013
- University of Colorado, Health Sciences Center, Denver, CO, Graduate teaching assistant, Biomedical Core Courses, 08/2005-08/2007

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.

AWARDS, HONORS AND RECOGNITION

Faculty

- JDRF Rocky Mountain Chapter Board of Chancellors, 2017-present
- JDRF Rocky Mountain Chapter Utah Valley Leadership Council, 2013-2017
- JDRF Rocky Mountain Chapter Hope of the Future Award, 2016-2017
- NIH Early Career Reviewer, 2016-Present
- BYU Diabetes Research Laboratory, Assistant Director, 2016-Present

Postdoctoral

- JDRF Postdoctoral Fellowship Recipient, 2008-2010
- ADA/Takeda Postdoctoral Fellowship Recipient, 2010-2012
- Keystone Symposia Scholarship NIDK Scholarship Type 2 Diabetes 2009
- Project SEED mentor (Lanair Lett), 2009-2010
- Siemens Competition Mentor, 2009-2010
- Intel Competition Mentor, 2009-2010
- Keystone Symposia Scholarship NIDDK Scholarship Islet Biology, 2010
- Beta Cell Biology Consortium Investigator Retreat Scholarship, 2011

Graduate School

- Graduate Merit Fellowship, 2001
- NIH Training Grant Recipient, University of Colorado Health Sciences Center, 2002-2004
- ARCS Light Scholarship, 2004
- ARCS Member Scholarship, 2005
- ARCS Member Scholarship, 2006
- Victor and Earleen Bolie Molecular Biology Scholarship, 2006
- Western Regional Islet Study Group Travel Grant, 2006
- Victor and Earleen Bolie Molecular Biology Scholarship, 2007
- Molecular Biology Program Recruitment and Admission committee, 2002-2007
- Keystone Symposia Scholarship NIAID Scholarship The Macrophage: Homeostasis, Immunoregulation and Disease, 2007

Undergraduate

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

FUNDING**Current External Funding**

- 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.
- *Integrated Islet Dispersal Program Islet Award Initiative, Title: Exploring mechanism by which beta cell heterogeneity effects beta cell proliferation. Term: 06/05/18-06/04/19. 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.
- 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.

Current Internal Funding

- 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.
- 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.
- 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.
- 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.

Completed

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- American Diabetes Association ADA/Takeda postdoctoral fellowship, Title: Novel pathways for the expansion of functional beta cell mass. Term: 08/01/2010-2012.
- Juvenile Diabetes Research Foundation postdoctoral fellowship, Title: Role of Nkx6.1 in modulation of islet beta-cell cycle control. Term 09/01/2008-2010.
- Predoctoral Institutional Training Grant (T32), Predoctoral training program in molecular biology, National Institute of General Medical Sciences, National Institutes of Health, 2002-204

Under Review

- NIH NIDDK R01, Title: Bioavailable gut microbial metabolites potentiate the b-cell stimulatory and protective activities of poorly-bioavailable dietary flavonoid. Term: 06/01/19-5/31/24 Total Costs: \$2,469,558. Role on Project: CO-P.I.

Student Funding

- 2018-2019 CURA Grant, Title: Exploring cocoa epicatechin ability to induce functional beta cell mass. Total Cost: \$1,500. Awardee: Mimi Ross Austin. Role on Award: Research Mentor.
- 2018-2019 CURA Grant, Title: Expression of cell cycle inhibitors in aged pancreatic beta cells. Total Cost: \$1,500. Awardee: Talon Aitken. Role on Award: Research Mentor.

- 2018-2019 CURA Grant, Title: Changes in Nkx6.1 binding partners as a function of aging. Total Cost: \$1,500. Awardee: Nathan Jensen. Role on Award: Research Mentor.
- 2018-2019 CURA Grant, Title: The Role of Nr4a1 in Beta cell Growth and Type 2 Diabetic Onset. Total Cost: \$1,500. Awardee: Adam Wynn. Role on Award: Research Mentor.
- 2018-2019 Andersen Diabets 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.

- 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.
- 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.
- 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.
- 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.
- 2013-2014 BYU ORCA Grant, Title: Discovery of pancreatic beta cell subpopulations. Total Costs: \$1,500. Awardee: Andrew Straford. Role on Award: Research Mentor.

CITIZENSHIP

Journal Leadership

- 2018-present-Journal of Visual Experimentation, guest editor methods collection "Methods to measure functional beta cell mass"
- 2017-present-Nuclear Receptor Research, editorial board

Journal Reviewer

- 2018-present-Ad Hoc Reviewer, Diabetes, Obesity and Metabolism
- 2018-present-Ad Hoc Reviewer, Experimental and Clinical Endocrinology & Diabetes
- 2018-present-Ad Hoc Reviewer, FASEB Journal
- 2017-present-Ad Hoc Reviewer, Journal of Molecular Cell Biology
- 2017-present-Ad Hoc Reviewer, Molecular and Cellular Endocrinology
- 2017-present-Ad Hoc Reviewer, Oncotarget
- 2016-present-Ad Hoc Reviewer, PLOS ONE
- 2016-present-Ad Hoc Reviewer, Diabetes
- 2016-present-Ad Hoc Reviewer, Journal of Molecular Cell Biology
- 2016-present-Ad Hoc Reviewer, American Journal of Physiology-Endocrinology and Metabolism
- 2016-present-Ad Hoc Reviewer, Nuclear Receptor Research
- 2015-present-Ad Hoc Reviewer, American Journal of Clinical Nutrition

Textbook Reviewer

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

Grant Reviewer

- 2018-present-Ad Hoc Reviewer, Czech Science Foundation
- 2018-present-Committee Reviewer, Danish Diabetes Academy Ph.D. student and postdoctoral grant applications
- 2018-present-Ad Hoc Reviewer, Department of Defense Congressionally Directed Medical Research Programs; Pre-Application Diabetes
- 2018-present-Ad Hoc Reviewer, Diabetes Action, Research and Education Foundation
- 2016-present-Ad Hoc Reviewer, Indiana Diabetes Research Center Pilot and Feasibility Grant

- 2016-present-Ad Hoc Reviewer, National Institute of Health, National Institute of Diabetes and Digestive and Kidney Diseases, Molecular and Cellular Biology Study Section
- 2015-present- Ad Hoc Reviewer, Diabetes UK
- 2013-present- Ad Hoc Reviewer, Juvenile Diabetes Research Foundation (JDRF FY13 SRA, FY15 SRA, FY18 SRA)

COLLEGE AND UNIVERSITY COMMITTEE AND ADMINISTRATIVE ASSIGNMENTS

2018

- Department Faculty Search Committee Chair
- Department Undergraduate Education Committee
- Department Graduate Education Committee
- Department Seminar Committee
- Department Honors Coordinator
- BYU Diabetes Club Faculty Mentor

2017

- College MEG Review Committee
- University WRI and Women's Grant Reviewer
- Department Faculty Search Committee Chair
- Department Undergraduate Education Committee
- Department Graduate Education Committee
- Department Seminar Committee
- Department Honors Coordinator
- BYU Diabetes Club Faculty Mentor

2016

- College MEG Review Committee
- Department Faculty Search Committee Chair
- Department Undergraduate Education Committee
- Department Graduate Education Committee
- Department Seminar Committee
- Department Honors Coordinator
- BYU Diabetes Club Faculty Mentor

2015

- College MEG Review Committee Chair
- Department Undergraduate Education Committee
- Department Graduate Education Committee
- Department Seminar Committee
- Department Honors Coordinator
- BYU Diabetes Club Faculty Mentor

2014

- College MEG Review Committee
- Department Undergraduate Education Committee
- Department Seminar Committee

2013

- College MEG Review Committee
- Department Undergraduate Education Committee
- Department Seminar Committee

Graduate Student Thesis/Dissertation Committees

- 2018-Present: Emily Orton (Masters Student, Thesis Committee Chair- Nutrition, Dietetics and Food Science Department)
- 2018-Present: Daniel Poole (Ph.D. Student, Thesis Committee Member – Biochemistry Department)
- 2018-Present: Jonard Valdoz (Ph.D. Student, Thesis Committee Member – Biochemistry Department)
- 2017-Present: Brooke Roark (Masters Student, Thesis Committee Member – Molecular and Microbiology Department)
- 2017-Present: Jacob Herring (Ph.D. Student, Thesis Committee Chair – Molecular and Microbiology Department)
- 2015-17: Tommy Rowley (Masters Student, Thesis Committee Chair – Nutrition, Dietetics and Food Science Department)
- 2015-17: Daniel Tueller (Masters Student, Thesis Committee Member – Nutrition, Dietetics and Food Science Department)
- 2015-17: Jordan Finnell (Masters Student, Thesis Committee Member – Biochemistry Department)
- 2015-16: Carrie Draney (Masters Student, Thesis Committee Chair – Nutrition, Dietetics and Food Science Department)

Professional and Scientific Societies

Membership

- American Diabetes Association
- Danish Diabetes Academy
- American Society for Biochemistry and Molecular Biology
- American Physiology Society
- American Society for Nutrition
- American Heart Association
- American Association for the Advancement of Science

Professional Society Service

- 2018-Present: Danish Diabetes Academy Committee for Talent Development Member
- 2018-Present: American Society for Biochemistry and Molecular Biology Undergraduate Abstract Competition Judge
- 2017-Present: American Physiology Society Communication Committee Member

TEACHING

BRIGHAM YOUNG UNIVERSITY

- NDFS 435 Nutritional Biochemistry and Metabolism: 2014 - present
- NDFS 434 Nutritional Bio-organic chemistry: 2016 – present
- NDFS 494R Mentored Research: 2013 - present
- NDFS 602 Advanced Human Nutrition 2-micronutrients: 2016 - present
- NDFS 631R Selected topics, protein, diabetes: 2015-present

ELON UNIVERSITY

- Bio 212 Population Biology and Evolutionary Biology, 2012-2013
- Bio 111 Introductory Cell Biology, 2013

ALAMANCE COMMUNITY COLLEGE

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

NORTH CAROLINA CENTRAL UNIVERSITY

- Biol 1300 Molecular and Cellular Function, 2010-2011

PRESENTATIONS

Scientific Meeting

1. 2018 American Diabetes Association (poster), Presentation: "Nr4a1 and Nr4a3 Knock Out Mice Have Impaired Glucose Clearance and Beta-cell function under high fat feeding."
2. 2018 Experimental Biology (oral), Presentation: "Effects of Epicatechin and its Gut Metabolites on Beta Cell Function, Survival and Proliferation."
3. 2018 Experimental Biology (oral), Presentation: "Molecular Mechanisms of Beta Cell Adaptation to Hyperlipidemia."
4. 2018 Experimental Biology (poster), Presentation: "MafB Overexpression Enhances Functional Beta Cell Mass."
5. 2018 Experimental Biology (poster), Presentation: "High fat fed Nr4a1 knock out mouse has significant modulation of mitochondrial respiration across various tissues."
6. 2018 Experimental Biology (poster), Presentation: "The expression differences of cyclin dependent kinase inhibitors in aged and young pancreatic beta cells."
7. 2017 American Diabetes Association (poster), Presentation: "Downregulation Impedes beta cell growth, survival and function"
8. 2017 Experimental Biology (oral), Presentation: "Monomeric cocoa epicatechins enhance glucose stimulated insulin secretion."
9. 2017 Experimental Biology (poster), Presentation: "Beta hydroxybutyrate favorably alters beta cell survival and mitochondrial bioenergetics."
10. 2017 Experimental Biology (poster), Presentation: "Beta hydroxybutyrate favorably alters muscle cell survival and mitochondrial bioenergetics."
11. 2017 Experimental Biology (poster), Presentation: "Determining the role of CEBP/a in functional beta cell mass."
12. 2016 Experimental Biology (poster), Presentation: "Overexpression of HDAC1 induces functional beta cell mass."
13. 2016 Experimental Biology (poster), Presentation: "Monomeric Cocoa Procyanidins enhance functional Beta Cell Mass."
14. 2016 Experimental Biology (poster), Presentation: "Aged Islets are Refractory to Nkx6.1 mediated beta cell proliferation."
15. 2016 American Diabetes Association (poster), Presentation: "Nr4a1 Mediated Beta Cell Proliferation Pathway"
16. 2016 LDS Life Sciences Symposium (oral), Presentation: "The Nr4a1 Mediated Beta Cell Proliferation Pathway"
17. 2015 Experimental Biology (poster), Presentation: "Aurora kinase A is critical for the Nkx6.1 mediated beta cell proliferation pathway"

18. 2015 Experimental Biology (poster), Presentation: "Expression of Cdk5r1, and not Cdk5, induces primary beta cell proliferation"
19. 2015 Experimental Biology (poster), Presentation: "c-Fos increases functional beta cell mass"
20. 2012 Keystone Symposia-Advances in Islet Biology (oral), Presentation: "Nkx6.1 mediated beta cell proliferation pathways"
21. 2011 Beta cell Biology Consortium Investigator Retreat (poster), Presentation: "Nkx6.1 mediated beta cell proliferation involves Nr4a1 nuclear receptors"
22. 2010 Keystone Symposia-Islet Biology (oral), Presentation: "The role of Nr4a nuclear receptors in Nkx6.1 mediated beta-cell proliferation"
23. 2009 Keystone Symposia-Type 2 diabetes and insulin resistance (poster), Presentation: "Aurora kinase A induces proliferation of rat islet beta cells"
24. 2008 Keystone Symposia-Islet and beta cell biology (poster), Presentation: "Nkx6.1 mediated beta cell proliferation"
25. 2007 Beta cell biology consortium investigator retreat (poster), Presentation: "Macrophages prevent islet loss and diabetes in a mouse model of chronic pancreatitis"
26. 2006 Keystone Symposia-The macrophage: homeostasis/immunoregulation/disease (oral), Presentation: "Macrophages prevent islet loss and diabetes in a mouse model of chronic pancreatitis"
27. 2005 Keystone Symposia-Towards Understanding Islet Biology (poster), Presentation: "Bone marrow derived cells prevent islet loss and diabetes in a mouse"
28. 2004 Keystone Symposia-Cell Cycle and Development (poster), Presentation: "E2F1 and E2F2 loss disrupts S and M phase coordination in exocrine tissue"
29. 2001 Beatson International Cancer Conference (poster), Presentation: "Transcription modification in human colon adenocarcinoma cells by vitamins and phytochemicals"
30. 2000 American Association of Cancer Research (poster), Presentation: "Synergistic effect of Vitamin C:K3 induction of apoptosis in the WIDR cell line"

Invited Scientific Meeting Oral Presentations

1. 2018 Experimental Biology, Presentation: "Effects of Epicatechin and its Gut Metabolites on Beta Cell Function, Survival and Proliferation."
2. 2017 Experimental Biology, Presentation: "Monomeric cocoa procyanidins enhances Beta-cell function by increasing mitochondrial respiration."
3. 2016 LDS Life Sciences Symposium, Presentation: "The Nr4a1 Mediated Beta Cell Proliferation Pathway."
4. 2012 Keystone Symposia-Advances in Islet Biology, Presentation: "Nkx6.1 mediated beta cell proliferation pathway"
5. 2006 Keystone Symposia-The Macrophage: Homeostasis/Immunoregulation/Disease, Presentation: "Macrophages prevent islet loss and diabetes in a mouse model of chronic pancreatitis."
6. 2006 Western Regional Islet Study Group, Presentation: "Macrophages prevent islet loss and diabetes in a mouse model of pancreatitis."

Invited University, Professional, and Community Presentations

1. 2018 University of Michigan Diabetes Research Center, Presentation: "Exploring the role of Nr4a nuclear hormone receptors on functional beta cell mass."
2. 2018 Eastern Michigan University, Presentation: "Exploring the role of Nr4a nuclear hormone receptors on functional beta cell mass."

3. 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."
4. 2017 University of Colorado Barbara Davis Center for Childhood Diabetes, Presentation: "Exploring the role of Nr4a nuclear hormone receptors on functional beta cell mass."
5. 2017 Duke University Molecular Physiology Institute, Presentation: "Exploring the role of Nr4a nuclear hormone receptors on functional beta cell mass."
6. 2017 City of Hope Beckman Research Institute, Presentation: "Exploring the role of Nr4a nuclear hormone receptors on functional beta cell mass."
7. 2017 Timpanogous Regional Hospital Grand Rounds, Presentation: "Increasing Functional Beta Cell Mass as a Treatment for Diabetes"
8. 2017 ACED Diabetes Camp, Presentation: "Increasing Functional Beta Cell Mass as a Treatment for Diabetes"
9. 2017 Juvenile Diabetes Research Foundation research update-Southern Utah Area: "Increasing Functional Beta Cell Mass as a Treatment for Diabetes"
10. 2017 Juvenile Diabetes Research Foundation research update-Utah County Area, Presentation: "Enhancing functional beta cell mass as a treatment for T1D"
11. 2017 Brigham Young University Medicinal Plants Seminar, Presentation: "Cocoa epicatechins to modulate beta cell function"
12. 2016 Juvenile Diabetes Research Foundation research update-Rocky Mountain Chapter, Presentation: "Enhancing functional beta cell mass as a treatment for T1D"
13. 2015 Juvenile Diabetes Research Foundation research update-Utah County Area, Presentation: "Enhancing functional beta cell mass as a treatment for T1D"
14. 2014 Brigham Young University, Molecular and Microbiology Department Seminar Series, Presentation: "Nr4a nuclear hormone receptors and beta cell proliferation"
15. 2013 Brigham Young University, Department of Nutrition, Dietetics and Food Science Seminar Series, Presentation: "Nr4a nuclear hormone receptors and beta cell proliferation"
16. 2011 Duke University Pharmacology Retreat, Presentation: "Nr4a1 and the Nkx6.1 pathway"
17. 2010 Brigham Young University, Department of Physiology and Developmental Biology Seminar Series, Presentation: "Nr4a1 and Nkx6.1 pathway"
18. 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"

PUBLICATIONS

Published Manuscripts

1. Draney C, Austin MC, Leifer AH, Smith CJ, Kener KB, Haines AC, Lett LA, Arlotto M, **Tessem JS**. HDAC1 overexpression enhances functional beta cell mass by downregulating Cdkn1b/p27. *Biochem J*. 2018 Dec 19;475(24):3997-4010. doi: 10.1042/BCJ20180465.
2. 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.

3. 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.
4. 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.
5. Rowley TJ 4th, Bitner BF, Ray JD, Lathen DR, Smithson AT, Dallon BW, Plowman CJ, Bikman BT, Hansen JM, Dorenkott MR, Goodrich KM, Ye L, O'Keefe SF, Neilson AP, **Tessem JS**. Monomeric cocoa catechins enhance β -cell function by increasing mitochondrial respiration. *J Nutr Biochem*. 2017 Nov;49:30-41. doi:10.1016/j.jnutbio.2017.07.015. Epub 2017 Jul 27. PubMed PMID: 28863367.
6. Sampson MJ, Lathen DR, Dallon BW, Draney C, Ray JD, Kener KB, Parker BA, Gibbs JL, Gropp JS, **Tessem JS**, Bikman BT β -Hydroxybutyrate improves β -cell mitochondrial function and survival. *Journal of Insulin Resistance*. 2017 August 31. <http://dx.doi.org/10.4102/JIR.v2i1.25>
7. Banks CJ, Rodriguez NW, Gashler KR, Pandya RR, Mortenson JB, Whited MD, Soderblom EJ, Thompson JW, Moseley MA, Reddi AR, **Tessem JS**, Torres MP, Bikman BT, Andersen JL. Acylation of Superoxide Dismutase 1 (SOD1) at K122 Governs SOD1-Mediated Inhibition of Mitochondrial Respiration. *Mol Cell Biol*. 2017 Sep 26;37(20). pii: e00354-17. doi: 10.1128/MCB.00354-17. Print 2017 Oct 15. PubMed PMID: 28739857; PubMed Central PMCID: PMC5615182.
8. Strat KM, Rowley TJ 4th, Smithson AT, **Tessem JS**, Hulver MW, Liu D, Davy BM, Davy KP, Neilson AP. Mechanisms by which cocoa flavanols improve metabolic syndrome and related disorders. *J Nutr Biochem*. 2016 Sep;35:1-21. doi: 10.1016/j.jnutbio.2015.12.008. Epub 2016 Jan 23. Review. PubMed PMID: 27560446.
9. Reynolds MS, Hancock CR, Ray JD, Kener KB, Draney C, Garland K, Hardman J, Bikman BT, **Tessem JS**. β -Cell deletion of Nr4a1 and Nr4a3 nuclear receptors impedes mitochondrial respiration and insulin secretion. *Am J Physiol Endocrinol Metab*. 2016 Jul 1;311(1):E186-201. doi: 10.1152/ajpendo.00022.2016. Epub 2016 May24. PubMed PMID: 27221116.
10. Ray JD, Kener KB, Bitner BF, Wright BJ, Ballard MS, Barrett EJ, Hill JT, Moss LG, **Tessem JS**. Nkx6.1-mediated insulin secretion and β -cell proliferation is dependent on upregulation of c-Fos. *FEBS Lett*. 2016 Jun;590(12):1791-803. doi:10.1002/1873-3468.12208. Epub 2016 May 26. PubMed PMID: 27164028.
11. Draney C, Hobson AE, Grover SG, Jack BO, **Tessem JS**. Cdk5r1 Overexpression Induces Primary β -Cell Proliferation. *J Diabetes Res*. 2016;2016:6375804. doi:10.1155/2016/6375804. Epub 2015 Dec 14. PubMed PMID: 26788519; PubMed Central PMCID: PMC4691621.
12. Hobson A, Draney C, Stratford A, Becker TC, Lu D, Arlotto M, **Tessem JS**. Aurora Kinase A is critical for the Nkx6.1 mediated β -cell proliferation pathway. *Islets*. 2015;7(1):e1027854. doi: 10.1080/19382014.2015.1027854. Epub 2015 Jun 1. PubMed PMID: 26030060; PubMed Central PMCID: PMC4588548.
13. **Tessem JS**, Moss LG, Chao LC, Arlotto M, Lu D, Jensen MV, Stephens SB, Tontonoz P, Hohmeier HE, Newgard CB. Nkx6.1 regulates islet β -cell proliferation via Nr4a1 and Nr4a3 nuclear receptors. *Proc Natl Acad Sci U S A*. 2014 Apr 8;111(14):5242-7. doi: 10.1073/pnas.1320953111. Epub 2014 Mar 24. PubMed PMID: 24706823; PubMed Central PMCID: PMC3986138.

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PATENTS

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MEDIA

2018

Radio

- BYU Radio(x2)

2017

Radio

- BYU Radio

Newspaper/Online News

- Diabetes Pro Smart Brief
- Daily Universe (twice)
- BYU Homepage cover story
- MD Magazine
- Daily Mail
- Sci-News.com
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- Medical News Today
- Reader's Digest
- Johns Hopkins News
- Phys.org
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- Nutra Ingredients
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- The Citizen-South Africa
- Cacao News
- Tomo News Science and Technology
- Express-UK
- New York Post
- Women's Health Letter

Print

- BYU Alumni Magazine

Television

- Utah KSL 5
- Chile Mega TV

2016

Print

- BYU Alumni Magazine

2015

Radio

- BYU Radio (twice)

Newspaper/Online News

- Daily Herald
- Daily Universe (twice)
- BYU Homepage cover story

Print

- BYU Alumni Magazine