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**Education**

Postdoctoral Fellow, Cardiovascular and Metabolic Diseases, Duke-NUS Graduate Medical School, Singapore, 2011

Ph.D., Bioenergetics, East Carolina University, Greenville, North Carolina, 2008

M.Sc., Exercise Physiology, Brigham Young University, Provo, Utah, 2005

B.Sc., Exercise Science, Brigham Young University, Provo, Utah, 2003

**Professional Experience**

- Brigham Young University, Provo, UT

Associate Professor, Department of Physiology and Developmental Biology, 07/17-Present

Assistant Professor, Department of Physiology and Developmental Biology, 07/11-06/17

- East Carolina University, Greenville, NC,

Graduate Assistant, Department of Exercise Science, 08/2006-10/2008

Graduate Instructor, Department of Exercise Science, 08/2007-12/2007

**Awards, Honors and Recognition**

**Faculty**

- APS Research Career Enhancement Award – 2013

- APS/NSF Mentor Award - 2013

- Oroboros Travel Award, O2K Workshop - 2012

**Postdoctoral**

- Travel Scholarship, Keystone Symposium - Lipid Biology and Lipotoxicity, 2011

**Graduate School**

- Valedictorian, Department of Exercise Sciences, Brigham Young University, 2005

- Dean’s List, Department of Exercise Sciences, Brigham Young University, 2003-2005

**Undergraduate**

- Sloan Speech Showcase: Public Speaking Award, Brigham Young University, 2002

- Undergraduate Academic Scholarship, Brigham Young University, 2000-2002

**Funding**

**Current**

- NIH R15 – RAGE targeting attenuates smoke-induced inflammation. Total costs: $300,000. Role on project: Co-I.

- Sponsored Research Agreement – Understanding the hyperglycemia of low-carbohydrate diets. Total costs: $130,000. Role on project: PI.

- Sponsored Research Agreement – The effects of chlorophyll on protecting against pollution-induced inflammation. Total costs: $58,272. Role on project: Co-PI.

- BYU Interdisciplinary Research Award – Diabetes, Arthritis, and Alzheimer’s Disease: Chronic inflammatory conditions with common origins and treatments. Total costs: $120,000. Role on project: Collaborator.

**In Review**

**Completed**

* Sponsored Research Agreement – Unicity: The capacity of a proprietary anti-oxidant cocktail to mitigate ROS. Total costs: $60,000. Role on project: Co-PI.
* BYU Gerontology Research Grant Award, Title: *A Role for Ceramides in Sarcopenia*. Total Costs: $10,000. Role on Project: PI.
* Predoctoral Institutional Training Grant (T32), NIH/NIA, 2005
* BYU Mentoring Environment Grant – TLR4/MyD88 signaling in cigarette smoke-induced heart ceramide accrual. Total costs: $20,000. Role on project: PI.
* BYU Life Sciences Translational Research Grant – The efficacy of TGFβ inhibition via SGI-1252 in the prevention and reversal of diet-induced obesity and diabetes. Total costs: $15,000. Role on project: PI.

**Unfunded** (last four years)

* NIH R01 – Investigating how perturbed lipid metabolism predisposes for development of Alzheimer’s disease. Total costs: $1,650,500. Role on project: Co-investigator.
* NIH R01 – The effects of RAGE on placental and offspring growth. Total costs: $1,332,905. Role on project: Co-investigator.
* NIH/FDA R01 – The effects of e-cigarettes on cardiopulmonary health. Total costs: $750,000. Role on project: Co-investigator.
* NIH R01 – Inflammatory Health Effects of ENDS Exposure. Total costs: $1,250,000. Role on project: Co-Investigator
* The Retirement Research Foundation – The effect of ketones on neuron mitochondrial physiology and cognition. Total costs: $125,000. Role on project: PI.
* DOD PRMRP – Defining the mechanism by which the orphan nuclear receptor Nr4a3 controls obesity and type 2 diabetes disease progression. Total costs: $300,000. Role on project: Co-investigator.

**BYU Diabetes Research Lab**

- 2018: $120,000 – Including a $110,000 gift to the established endowments.

- 2017: $114,000 – Including a $100,000 gift to the established endowments.

- 2016: $156,000 – Including a donation to establish two endowments to fund student research and conference travel.

- 2015: $12,000

**Gifts**

- Performance Labs (2016-2019): $15,000

- Becton-Dickinson (2015/2016): $4,000

- Mannatech Inc. (2015): $5,000

- College of Physical and Mathematical Sciences (2014): $15,000.

**Student Funding**

* 2019 BYU CURA, Title: The effect of β-hydroxybutyrate on brain mitochondrial function. Total costs: $1,500. Awardee: Lance Good
* 2017 BYU ORCA, Title: The Efficacy of Orally Ingested β-hydroxybutyrate in Skeletal Muscle in the Prevention and Reversal of Diet-induced Obesity and Diabetes. Total costs: $1,500. Awardee: Brian Parker
* 2016 BYU Graduate Research Fellowship, Title: The role of insulin in the etiology of Alzheimer disease. Total costs: $10,000. Awardee: Sheryl Carr
* 2016 BYU ORCA, Title: The Efficacy of TGF-Beta Inhibition via SGI-1252 in the Prevention and Reversal of Diet-induced Obesity and Diabetes. Total costs: $1,500. Awardee: Blake Dallon
* 2013 APS/NSF, Undergraduate Research Fellowship, Title: Reactive Oxygen Species and Mitochondrial Fission. Total costs: $4,000. Awardee: Braden Tucker
* 2013 BYU Graduate Research Fellowship, Title: Ceramides as a Mediator of Cigarette Smoke-induced Metabolic Disruption. Total costs: $15,000. Awardee: Mikayla Thatcher
* 2013 BYU ORCA Grant, Title: Ceramides and Oxidative Stress. Total costs: $1,000. Awardee: Braden Tucker
* 2012 BYU ORCA Grant, Title: Ceramides and AMPK. Total costs: $1,000. Awardee: Kate Erickson
* 2012 Graduate Research Fellowship, Title: Ceramides and Mitochondrial Function. Total costs: $15,000. Awardee: Melissa Smith

**Service**

**Journal Reviewer**

- Alzheimer’s & Dementia: The Journal of the Alzheimer’s Association

- Experimental and Clinical Endocrinology & Diabetes

- Nature Metabolism

- International Journal of Molecular Science

- Journal of Biological Chemistry

- Journal of Lipid Research

- Diabetology and Metabolic Syndrome

- PloS One

- The American Journal of Physiology: Regulatory, Integrative, and Comparative Physiology

- The International Journal of Sports Medicine

- Journal of Gerontology: Medical Science

- Life Sciences Journal

- BMC Public Health

- Scientific Reports – Nature

- Journal of Applied Physiology, Nutrition, and Metabolism

**Journal Leadership**

2020-present: General Topic Editor, International Journal of Molecular Science

2018-present: Lead guest editor, International Journal of Molecular Science, “Effects of Ketones on Metabolic Function”

2017-2020: Editorial board member, Journal of Insulin Resistance

2016-2017: Guest editor, International Journal of Molecular Science, “Inhaled Pollutants Modulate Respiratory and Systemic Diseases”

2015-2016: Lead guest editor, Journal of Diabetes Research, “The Role of Inhaled Pollution in the Etiology of Insulin Resistance”

2006-2008: Assistant Editor, The International Journal of Sports Medicine

**Grant Reviewer**

2019: - Auckland Medical Research Foundation

2016: - CSR NIH Early Career Reviewer Program

- Maratona de Saude, Cardiovascular Complications of Diabetes and Metabolism (Portugal)

2015: - Maratona de Saude, Cardiovascular Complications of Diabetes and Metabolism (Portugal)

- UK Diabetes Fund (England)

**Society Leadership and Responsibilities**

2016: - Experimental Biology – Co-Chair: Focus on the effects of alcohol abuse, behavior, diet, nutrition, and extreme environmental conditions on physiology

- International Association of Medical Science Educators – Nutrition Objectives Group Member

2015: - American Physiology Society – Translational Physiology Interest Group Planning Committee Member, **2015 – present**

2011: - Conference assistant, Keystone Symposium – Lipid Biology and Lipotoxicity, Killarney, Ireland

2010: - Asia-Pacific Diabetes Obesity Study Group – Chair; Singapore

- Graduate student assistant mentor

- Postdoctoral representative for the Program in Cardiovascular and Metabolic Diseases, Duke-NUS Graduate Student Recruitment Committee

**University Appointments and Administrative Responsibilities**

2020: - Chair: Department Research Committee (**ongoing**)

2019: - Department search committee member

- Teaching and Learning Task Force peer reviewer

2018: - Department search committee member

2017: - College Faculty Consultant with LSAC Pre-professional Development Committee (**ongoing**)

- Department Search Committee Member

2015: - College ORCA Reviewer

2014: - Department Research Committee Member

- College MEG Review Committee Chair

- Department Safety Officer

- College Safety Committee

2013: - College MEG Review Committee

- Department Safety Officer

2012: - Department search committee member

- Department Safety Officer

2011: - Department Safety Officer

2010: - Session Chair, Asia-Pacific Diabetes Obesity Study Group, Singapore

- Graduate student assistant mentor

- Postdoctoral representative for the Program in Cardiovascular and Metabolic Diseases, Duke-NUS Graduate Student Recruitment Committee

2004-2005: - Assistant Investigator, The Brigham Young University Lifestyle Project

**General University Service**

2017-2018: - Faculty advisor, BYU Strong Barbell Club

2016: - Director, BYU Diabetes Research Lab (**ongoing**)

- Education Week Presenter: “Why we get sick: Insulin resistance and chronic disease”

2015: - Education Week Presenter: “Why we get sick: Insulin resistance and chronic disease”

- Organizer and Director, BYU Sugar Rush 5K (diabetes awareness and fundraiser event) (**ongoing**)

2014: - UCUR Moderator

**Graduate Student Thesis/Dissertation Committees**

2020: - Nathan Zuniga (Dissertation Committee Member – Biochemistry)

- Landon Deru (Dissertation Committee Member – Exercise Sciences)

- Christopher Mendoza (Dissertation Committee Member – PDBIO)

2019: - Lynda Guildford, Auckland University of Technology (Thesis Committee Member)

2018: - Chase Walton (Thesis Committee **Chair** – PDBIO; Graduated 2020)

- Erin Saito (Dissertation Committee **Chair** – PDBIO)

- Jacob Herring (Dissertation Committee Member – MMBIO)

2016: - Sheryl Carr (Thesis Committee **Chair** – PDBIO; Graduated 2016)

- Kevin Steed (Dissertation Committee Member – Neuro)

- BreAnna Hutchinson (Dissertation Committee Member – Neuro)

- Brandon Rose (Dissertation Committee Member – PDBIO)

2015: - Aimee Hodson (Thesis Committee **Chair** – PDBIO; Graduated 2016)

- Bradley Naylor (Dissertation Committee Member – Biochemistry)

- Carri Draney (Thesis Committee Member – NDFS)

2014: - Nidhi Choksi (Thesis Committee Member – MMBIO)

- Trevor Tippetts (Thesis Committee **Chair** – PDBIO; Graduated 2015)

- Kai Li Ong (These Committee Member – MMBIO)

2013: - Seung Ook Yang (Dissertation Committee Member – Biochemistry)

- Courtney Banks (Dissertation Committee Member – Biochemistry)

- Michael Nelson (Thesis Committee Member – PDBIO)

- Amy Crandall (Dissertation Committee Member – PDBIO)

- Chen Ting (Dissertation Committee Member – PDBIO)

- Duane Winden (Dissertation Committee Member – PDBIO)

2012: - Melissa Smith (Dissertation Committee **Chair** – PDBIO; Graduated 2014)

- Mikayla Thatcher (Dissertation Committee **Chair** – PDBIO; Graduated 2015)

- Shalene Hardman (Dissertation Committee Member – PDBIO)

- Kevin Tuttle (Dissertation Committee Member – PDBIO)

2011: - Shenali De Silva (Dissertation Committee Member – PDBIO)

**General Community Service**

2017: - Science Advisor, Honors Science Research, Wilbur High School, Spokane, WA

2016: - Revere Health Advisor (ongoing)

**Consulting**

- UnitedHealth Group: 2019

- Unicity Scientific Advisory Board: 2016 – 2020

- Expert consultant, Kelley, Drye & Warren LLP: 2015

**Professional and Scientific Societies**

**Membership**

- Mitochondrial Physiology Society

- American Diabetes Association

- American Physiology Society

- American Society for Investigative Pathology

**Teaching**

**Brigham Young University**

- PDBIO601 Cell and Molecular Physiology: 2013 – present

- PDBIO365 Pathophysiology: 2012 – present

- PDBIO2/495R Research Methods: 2012 – present

- EXSC367 Exercise Physiology Lab: 2004 – 2005

**East Carolina University**

- EXSS8330 Advanced Topics in Metabolism, selected lectures, 2008

- EXSS3805 Physiology of Exercise, 2007

**Presentations**

**Scientific Meetings**

1. 2021 Experimental Biology (oral)

Presentation: “Alzheimer’s disease alters oligodendrocytic glycolytic and ketolytic gene expression

1. 2020 Experimental Biology (poster)

Presentation: “Metabolic RNA-seq profiles from sporadic Alzheimer’s disease patients: Analysis of glycolytic and ketolytic pathways”

1. 2020 Experimental Biology (poster)

Presentation: “Selective androgen receptor modulation with MK-2866 favorably alters muscle mitochondrial bioenergetics”

1. 2020 Experimental Biology (poster)

Presentation: “4-HNE unfavorably alters muscle mitochondrial bioenergetics and cell viability”

1. 2019 Experimental Biology (poster)

Presentation: “Effect of beta-hydroxybutyrate on myoblast proliferation and differentiation”

1. 2018 Keystone Symposia – Diabetes Mellitus (oral)

Presentation: “Beta-hydroxybutyrate favorably alters beta-cell survival and mitochondrial bioenergetics”

1. 2018 Experimental Biology (oral)

Presentation: “The contrasting effects of ketones on mitochondrial function in muscle and adipose”

1. 2018 Experimental Biology (oral)

Presentation: “The role of ketones on adipocyte mitochondrial uncoupling”

1. 2017 Experimental Biology (poster)

Presentation: “Nasal administration of diesel exhaust particles does not evoke inflammation, endothelial dysfunction, or initiate autophagy in murine femoral arteries”

1. 2017 Experimental Biology (poster)

Presentation: “Beta-hydroxybutyrate favorably alters muscle cell survival and mitochondrial bioenergetics”

1. 2017 Experimental Biology (poster)

Presentation: “Beta-hydroxybutyrate favorably alters beta-cell survival and mitochondrial bioenergetics”

1. 2017 Experimental Biology (poster)

Presentation: “SGI-1252, a TGF-beta inhibitor, protects against diet-induced obesity and insulin resistance in mice”

1. 2017 Experimental Biology (poster)

Presentation: “Insulin alters brain lipid profile and mitochondrial function”

1. 2017 Experimental Biology (Oral)

Presentation: “Diesel exhaust particle exposure compromises macrophage mitochondrial physiology”

1. 2016 Experimental Biology (poster)

Presentation: “Treatment with diet or insulin induces a different placental ceramide expression during gestational diabetes mellitus”

1. 2016 Experimental Biology (poster)

Presentation: “Acylation of SOD1 provides tool to determine if mitochondrial aggregation of SOD1 is main driver of ALS”

1. 2016 Experimental Biology (oral)

Presentation: “Insulin treatment increases myocardial ceramide accumulation and disrupts cardiometabolic function”

1. 2016 Experimental Biology (poster)

Presentation: “Gingival cell smoke exposure disrupts skeletal muscle metabolic function”

1. 2016 Experimental Biology (poster)

Presentation: “HMGB1 mediates sidestream cigarette smoke-induced metabolic disruption”

1. 2016 American Association of Dental Research (poster)

Presentation: “Smoke exposure disrupts skeletal muscle metabolic function through oral gingiva”

1. 2015 Experimental Biology (poster)

Presentation: “Ceramide-induced Mitochondrial Fission is Necessary for Sidestream Cigarette Smoke-induced Cardiometabolic Disruption”

1. 2015 Experimental Biology (poster)

Presentation: “Macrophage-secreted Ceramides are Necessary for Skeletal Muscle Mitochondrial Disruption with LPS Treatments”

1. 2015 Experimental Biology (poster)

Presentation: “Macrophage-secreted Ceramides are Necessary for Myocardial Mitochondrial Disruption with LPS Treatments”

1. 2014 American Diabetes Association Scientific Sessions (oral)

Presentation: “Mitochondrial Fission is Necessary for Ceramide-induced Metabolic Disruption”

1. 2014 American Diabetes Association Scientific Sessions (poster)

Presentation: “Ceramide is Necessary for Smoke-induced Cardiomyocyte Mitochondrial Disruption”

1. 2014 American Diabetes Association Scientific Sessions (poster)

Presentation: “Insulin Increases Ceramide Biosynthesis in Skeletal Muscle”

1. 2014 American Diabetes Association Scientific Sessions (poster)

Presentation: “Ceramide Mediates Cigarette Smoke-induced Metabolic Disruption”

1. 2014 American Diabetes Association Scientific Sessions (poster)

Presentation: “RAGE Activation Disrupts Heart Mitochondrial Function”

1. 2014 Experimental Biology (poster)

Presentation: “Mitochondrial Fission is Necessary for Ceramide-induced Metabolic Disruption”

1. 2014 Experimental Biology (poster)

Presentation: “Ceramide is Necessary for Smoke-induced Cardiomyocyte Mitochondrial Disruption”

1. 2013 Experimental Biology (poster)

Presentation: “Reactive Oxygen Species Generation as a Result of Ceramide-induced Mitochondrial Fission”

1. 2013 Experimental Biology (poster)

Presentation: “Ceramides as a Mediator of Cigarette Smoke-induced Metabolic Disruption”

1. 2013 Experimental Biology (poster)

Presentation: “Mitochondrial Fission as a Mediator of Ceramide-induced Metabolic Disruption”

1. 2012 APS – Integrative Biology of Exercise (poster)

Presentation: “AICAR selective inhibits ceramide biosynthesis in skeletal muscle”

1. 2011 FASEB Summer Research Conferences – Glucose Transporters, Signaling, and Diabetes (poster)

Presentation: “Dihydroceramide desaturase inhibition prevents ceramide accumulation and improves insulin sensitivity”

1. 2011 Keystone Symposium – Lipid Biology and Lipotoxicity (poster)

Presentation: “Fenretinide improves insulin sensitivity by inhibiting dihydroceramide desaturase and preventing ceramide accumulation”

1. 2011 Singapore Annual Scientific Meeting in Translational Science (poster)

Presentation: “Fenretinide improves insulin sensitivity by inhibiting dihydroceramide desaturase and preventing ceramide accumulation”

1. 2011 Keystone Symposium - Type 2 Diabetes, Insulin Resistance and Metabolic Dysfunction (poster)

Presentation: “Resveratrol protects from lipid-induced insulin resistance, independent of Sirt1, via inhibition of ceramide”

1. 2010 Duke-NUS Research Symposium, Singapore (oral)

Presentation: “Mechanism of inflammation-induced insulin resistance: Reliance of TLR4 action on ceramide synthesis reveals role for saturated fatty acids”

1. 2010 SingHealh-Duke-NUS Scientific Congress, Singapore (poster)

Presentation: “Inflammation, Lipids, and Insulin Resistance”

1. 2010 Meeting of the Asia-Pacific Diabetes/Obesity Study Group, Singapore (oral)

Presentation: “Mechanism of inflammation-induced insulin resistance: Reliance of TLR4 action on ceramide synthesis reveals role for saturated fatty acids”

1. 2010 MGH-KI-Cell Days of Molecular Medicine, Stockholm, Sweden (oral)

Presentation: “Mechanism of inflammation-induced insulin resistance: Reliance of TLR4 action on ceramide synthesis reveals role for saturated fatty acids”

1. 2009 American Diabetes Association Scientific Session, New Orleans, LA (oral)

Presentation: “Lipid-induced insulin resistance is prevented in lean and obese myotubes with AICAR treatment”

1. 2008 APS Integrative Biology, Hilton Head, SC (poster)

Presentation: “The effects of intrinsic aerobic capacity and diet on insulin signaling and IKKβ activity in rats”

1. 2008 American Diabetes Association Scientific Session, San Francisco, CA (poster)

Presentation: “Insulin Sensitivity Improves After Gastric-Bypass in the Obese: a Possible Mechanism”

1. 2008 Experimental Biology, San Diego, CA (poster)

Presentation: “A Novel Mechanism for Metformin in Improving Insulin Signaling in Skeletal Muscle”

1. 2005 ACSM National Meeting, Nashville, TN (oral)

Presentation: “VO2max and C-Reactive Protein in Women”

**Invited Scientific Meeting Oral Presentations**

1. 2020 Obesity and Lymphatics Disorders Summit

Presentation: “Insulin and Lipidema: Fat Where it Doesn’t Belong”

1. 2020 American College of Sports Medicine Annual Meeting

Presentation: “Insulin vs. Ketones: the battle for brown fat”

1. 2020 Metabolic Health Summit

Presentation: “A new paradigm for type 2 diabetes”

1. 2018 American Society of Integrative Pathology

Presentation: “Insulin vs. Ketones: Contrasting effects on brown adipose tissue”

1. 2016 American College of Sports Medicine Annual Meeting

Presentation: “Ceramides Force Fission”

1. 2016 Experimental Biology

Presentation: “Mitochondrial fission is necessary for ceramide-induced metabolic disruption”

1. 2015 American Physiological Society – Physiological Bioenergetics

Presentation: “Sphingolipid accrual is necessary for LPS-induced mitochondrial disruption”

1. 2016 Thailand Medical Professionals

Presentation: “Insulin Resistance and Chronic Diseases”

**Invited University and Professional Presentations**

1. 2021 Revere Health Grande Rounds

Presentation: “The metabolic origins of heart disease”

1. 2021 Penn State University – Department of Biochemistry

Presentation: “Understanding insulin resistance”

1. 2021 Stanford University – Department of Bioengineering

Presentation: “The cause and consequence of insulin resistance”

1. 2021 Environmental Health Summit

Presentation: “The Second Pandemic: Insulin resistance and the plagues of prosperity”

1. 2021 American Specialty Health Symposia

Presentation: “Why we get sick and what to do about it”

1. 2021 Metabolix – Israeli Medical Professionals Seminar

Presentation: “Flipping the switch: From insulin resistance to diabetes”

1. 2021 United States Navy Medical Professionals – Physicians’ Grand Rounds

Presentation: “Flipping the switch: from insulin resistance to diabetes”

1. 2020 International Medical University, Kuala Lumpur, Malaysia

Presentation: “The role of insulin resistance in chronic disease”

1. 2019 The Friedman Center for Breast and Lymphatic Surgery

Presentation: “Why we get sick”

1. 2019 East Carolina University – Diabetes and Metabolism Research Center

Presentation: “Ceramides and Mitochondria”

1. 2019 BYU Marriott School of Management

Presentation: “Misguided Medicine: Why we get sick and fat”

1. 2018 Thailand Medical Professional Seminar - Bangkok

Presentation: “Ketones: A metabolic advantage”

1. 2018 University of Utah

Presentation: “Arylhydratase receptors as mediators of pollution-induced heart ceramide accrual”

1. 2018 Brigham Young University Forum Address

Presentation: “The plagues of prosperity”

1. 2018 Duke-National University of Singapore

Presentation: “Insulin vs. Ketones: The battle for brown fat”

1. 2018 Autism Hope Awareness

Interview: “The role of sugar in chronic diseases”

1. 2018 Cotton Tree Family Practice Grand Rounds

Presentation: “Why we get sick and fat”

1. 2018 Chinese University of Honk Kong

Presentation: “The Air we Breathe: The effects of Diesel Exhaust on Macrophage Mitochondrial Bioenergetics”

1. 2017 Oman Medical Professional Seminar

Presentation: “Insulin resistance: the plague of prosperity”

1. 2016 Timpanogos Regional Hospital Grand Rounds

Presentation: “Why we get sick: the role of insulin resistance in chronic disease”

1. 2016 Thailand Medical Professionals

Presentation: “Why we get sick: Insulin resistance and Chronic disease”

1. 2015 University of Louisville Diabetes and Obesity Center

Presentation: “Ceramides mediate metabolic disruption following inhaled pollution”

1. 2015 Roseman University of Health Sciences

Presentation: “The pathology of Insulin Resistance”

1. 2014 Brigham Young University, Cancer Research Program

Presentation: “Ceramides, Mitochondria, and Cancer”

1. 2013 Southwest Chapter of ACSM

Presentation: “The role of ceramides as a mediator of metabolic disruption”

1. 2013 University of Utah Vascular Research Laboratory

Presentation: “The Role of Sphingolipids in Metabolic Disruption”

1. 2013 Salt Lake City ARUP Laboratories

Presentation: “Insulin Resistance: The Great Mediator”

1. 2011 Brigham Young University, Department of Nutrition and Food Science Lecture Series

Presentation: “Ceramide as a Regulator of Obesity and Metabolism”

1. 2010 Brigham Young University, Department of Physiology and Developmental Biology Lecture Series

Presentation: “Between a Rock and Hard Place: Ceramide as a Mediator of Inflammation-induced Insulin Resistance”

1. 2007 East Carolina University, Metabolic Institute for Obesity and Diabetes Research

Presentation: “Does AMPK Inhibit NF-κB in Skeletal Muscle?”

**Invited Community Presentations**

1. 2020 Logan City Swimmer’s Association

Presentation: “Fuel Use and Performance”

1. 2020 BYU Men’s Volleyball

Presentation: “Fuel Use and Performance”

1. 2020 Pacific Area; Church of Jesus Christ of Latter-day Saints

Presentation: “Why we get sick and what to do about it”

1. 2020 BYU Education Week

Presentation: “Why we get sick”

1. 2019 BYU Physical Facilities Lunch and Learn

Presentation: “Why we get sick and fat”

1. 2019 Utah Wellness Symposium

Presentation: “Why we get sick and fat”

1. 2019 YSA 3rd Stake; Church of Jesus Christ of Latter-day Saints

Presentation: “Insulin Resistance: Why we get fat and sick”

1. 2017 Orem Rotary Club

Presentation: “In defense of fat”

1. 2017 KetoCon

Presentation: “Insulin vs. Ketones: Battle for the Mitochondrion”

1. 2017 Southern Alberta Chautauqua

Presentation: “Why we get sick and fat: what to do about it”

1. 2017 Elderquest, Utah Valley University

Presentation: “Why we get sick and fat”

1. 2016 Southern Alberta Chautauqua

Presentation: “The Plagues of Prosperity”

1. 2016 Brigham Young University Police

Presentation: “In Defense of Fat”

1. 2015 Brigham Young University, Diabetes Club

Presentation: “Diabetes, Insulin, and Ketones”

**Publications**

**Manuscripts in Review**

**Published Manuscripts**

1. Saito ER, Miller JB, Harari O, Cruchaga C, Mihindukulasuriya KA, Kauwe JSK, **Bikman BT**. Alzheimer’s disease alters oligodendrocyte glycolytic and ketolytic gene expression. *Alzheimer’s & Dementia* 2021. PMID: 33650792
2. Walton CM, Jacobsen SM, Dallon BW, Saito ER, Bennett SLH, Davidson LE, Thomson DM, Hyldahl RD, **Bikman BT**. Ketones elicit distinct alterations in adipose mitochondrial bioenergetics. *Int J Mol Sci* 2020. PMID: 32872407 (*This manuscript was featured as the “highlight” article for the issue. This manuscript was rated the highest-downloaded article in the “biochemistry” section of the journal for 2020.)*
3. Hirschi KM, Tsai KYF, Davis T, Clark JC, Knowlton MN, **Bikman BT**, Reynolds PR, Arroyo JA. Growth arrest-specific protein-6/AXL signaling induces preeclampsia in rats. *Biol Reprod* 2020. PMID: 31347670.
4. Chen T, Hill JT, Moore TM, Cheung ECK, Olsen ZE, Piorczynkis 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. *Biochemia et Biophysica* 2020. PMID: 32339642.
5. Ludwig DS, Ebbeling CB, **Bikman BT**, Johnson JD. Testing the Carbohydrate-Insulin Model in Mice: The Importance of Distinguishing Primary Hyperinsulinemia from Insulin Resistance and Metabolic Dysfunction. *Mol Metab* 2020. PMID: 3299816.
6. Gibbs JL, Dallon BW, Lewis JB, Walton CM, Arroyo JA, Reynolds PR, **Bikman BT**. Diesel exhaust particle exposure compromises macrophage mitochondrial physiology. *Int J Mol Sci* 2019. PMID: 31717476.
7. Mejia J, Hirschi K, Tsai KYF, Long M, Tullis B, Bitter EEK, **Bikman BT**, Reynolds PR, Arroyo JA. Differential placental ceramide levels during gestational diabetes mellitus (GDM). *Reproductive Biology and Endocrinology* 2019. PMID: 31647034.
8. Walton CM, Perry K, Hart RH, Berry SL, **Bikman BT**. Improvements in glycemic and lipid profiles in type 2 diabetics with a 90-day ketogenic diet. *Journal of Diabetes Research* 2019. PMID: 8681959.
9. Hirschi KM, Tsai KYF, Davis T, Clark JC, Knowlton MN, **Bikman BT**, Reynolds PR, Arroyo JA. Growth Arrest Specific Protein (Gas)-6/AXL Siganling Induces Preeclampsia (PE) in Rats. *Biology of Reproduction* 2019. PMID: 31347670.
10. Fox JC, Evans AT, Blomfield MP, Livingstone SK, Tenney SR, Webster JB, Perry K, Hill JT, **Bikman BT**, Hansen MDH. Resistance mechanisms and cross-resistance for a pyridine-pyrimidine amide inhibitor of microtubule polymerization. *Molecular Cancer Therapeutics* 2019PMID: 31047749.
11. Pape JA, Newey CR, Burrell HR, Workman A, Perry K, **Bikman BT**, Bridgewater LC, Grose JH. Per-Arnt-Sim Kinase (PASK) deficiency increases cellular respiration on a standard diet and decreases liver triglyceride accumulation on a western high-fat high-sugar diet. *Nutrients* 2018 PMID: 30558306.
12. DeMille D, Pape JA, **Bikman BT**, Ghassemian M, Grose JH. The regulation of Cbf1 by PAS Kinase is a pivotal control point for lipogenesis versus respiration in *Sacchromyces cerevisiae*. *G3 (Bethesda)* 2018 PMID: 30381292.
13. Parker BA, Walton CM, Carr ST, Andrus JL, Cheung ECK, Duplisea MJ, Wilson EK, Draney C, Lathen DR, Kenner KB, Thomson DM, Tessem JS, **Bikman BT**. β-hydroxybutyrate elicits favorable mitochondrial changes in skeletal muscle. *Int J Mol Sci* 2018 19(8); 10.3390/ijms19082247.
14. Dallon BW, Parker BA, Hodson AE, Tippetts TS, Harrison ME, Appiah MMA, Witt JE, Gibbs JL, Gray HM, Sant TM, **Bikman BT**. Insulin selectively reduces mitochondrial uncoupling in brown adipose tissue in mice. *Biochem J* 2018 475(3):561.
15. Rowley TJ, Bitner BF, Ray JD, Lathen DR, **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 49:30-41.
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