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Sihem Boudina, Ph.D.
University of Utah
College of Health
Nutrition and Integrative Physiology

CONTACT INFORMATION

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UNIVERSITY OF UTAH ACADEMIC HISTORY

Biochemistry, 07/01/2014 - Present

07/01/2014 Adjunct Assistant Professor
07/01/2017 Adjunct Associate Professor

Internal Medicine (Endocrinology and Metabolism), 04/08/2008 - Present

04/08/2008 - Research Assistant Professor
01/03/2010
01/04/2010 - Assistant Professor
12/31/2015
01/01/2016 Adjunct Assistant Professor
07/01/2017 Adjunct Associate Professor

Nutrition and Integrative Physiology, 07/01/2016 - Present

07/01/2016 Assistant Professor
07/01/2017 Associate Professor

Nutrition, 01/01/2016 - 06/30/2016

01/01/2016 - Assistant Professor
06/30/2016

Surgery (Cardiothoracic Surgery), 09/15/2013 - Present

09/15/2013 Adjunct Assistant Professor

PROFESSIONAL EXPERIENCE

Full-Time Positions

- 2017 - Associate Professor, Department of Nutrition and Integrative Physiology, Salt Lake
Present City, Utah
- 2016 - Tenure Track Assistant Professor, Department of Nutrition and Integrative
2018 Physiology, Utah
- 2010 - Tenure Track Assistant Professor, Division of Endocrinology, Diabetes and
2015 Metabolism, University of Utah, Salt Lake City, Utah
- 2008 - Research Track Assistant Professor, Division of Endocrinology, Diabetes and
2010 Metabolism. University of Utah, Salt Lake City, Utah

Editorial Experience

- 2015 - Editorial Board for Journal of Diabetes Research
Present
- 2014 - Associate Editor to Scientific Reports
Present
- 2014 - Guest Editor to Oxidative Medicine and Cellular Longevity
Present
- 2013 - Contract Editor for ACCDON LLC
Present

Reviewer Experience

- 2020 - Reviewer for PNAS
Present
- 2020 - Reviewer for Nature Communication
Present
- 2020 - Reviewer for Molecular Metabolism
Present
- 2018 - Reviewer for Journal of Lipid Research
Present
- 2018 - Reviewer for Antioxidant and Redox Signaling
Present
- 2017 - Reviewer for Cell Reports
Present
- 2017 - Reviewer for Circulation Research
Present
- 2016 - Reviewer for Molecular and Cellular Endocrinology
Present
- 2016 - Reviewer for Adipocytes
Present
- 2014 - Reviewer for Nutrition Research
Present
- 2013 - Reviewer for Life Sciences
Present
- 2013 - Reviewer for Scientific Reports
Present
- 2013 - Reviewer for European Journal of Nutrition
Present
- 2013 - Reviewer for Molecular and Cellular Biochemistry
Present
- 2012 - Reviewer for Circulation
Present

2011 - Reviewer for JoVE
Present
2010 - Reviewer for FASEB J
Present
2009 - Reviewer for Endocrinology
Present
2007 - Reviewer for PLOS One
Present
2007 - Reviewer for Journal of Molecular and Cellular Cardiology
Present
2007 - Reviewer for Diabetes
Present
2007 - Reviewer for American Journal of Physiology
Present
2007 - Reviewer for Journal of Cardiovascular Pharmacology
Present

ADMINISTRATIVE EXPERIENCE

Administrative Duties

2013 - Director of the Metabolic Phenotyping Core Facility, University of Utah
2016
2011 - Associate Director of the Metabolic Phenotyping Core Facility, University of Utah
2013

Grant Review Committee/Study Section

2021 Standing member, Integrative Myocardial Physiology/Pathophysiology A Study Section
2020 Ad-hoc member, Canada Foundation for Innovation
2020 Ad-hoc member, AHA TPA Basic Cardiac Science 2
2019 - Ad-hoc member, Cardiac Contractility, Hypertrophy, and Failure (CCHF) study section
2021
2019 Ad-hoc reviewer, European Research Council (ERC)
2019 Ad-hoc member, Integrative Physiology of Obesity and Diabetes (IPOD) study
2018 Ad-hoc reviewer, National Institute of General Medical Sciences RM1 grants
2018 Ad-hoc reviewer, National Institute of Aging Scientific Review Group P01
2017- The American Association for the Advancement of Science (AAAS) Research
2018 Competitiveness Program

2016 Reviewer Diabetes UK
2013 - Ad-hoc Reviewer, Cellular Aspects of Diabetes and Obesity (CADO) Study Section,
2021 NIDDK
2014 Grant Reviewer, Barth Syndrome Foundation
2012 - Grant Reviewer, University of Utah Funding Incentive Seed Grant Program
2021
2012 - Grant Reviewer, Medical Student Summer Research Program
2021

2011 - Grant Reviewer, Undergraduate Research Opportunities (UROP)
2021

Symposium/Invited Speaker/Meeting Chair/Coordinator

- 2020 Speaker, 2020 Victor J. Dzau Seminar Series
Duke Cardiovascular Research Center
Talk title: Metabolic Dysregulation in Acquired and Inherited Cardiomyopathies
- 2018 Speaker, II Workshop on Inflammation, Rio de Janeiro, Brazil
Session title: Metabolism
Talk title: Redox-Regulation of Thermogenesis and Metabolism
- 2018 Speaker, Medical College of Georgia, Department of Physiology Research Seminar, Augusta University
Talk title: Adipocytes ROS and Metabolic Regulation: Friend or a Foe?
- 2018 Speaker, NHLBI Unlocking the secrets of Mitochondria: Path to a Cure in Heart Failure Workshop, Bethesda, MD
Talk title: Mitochondrial Dysfunction in the Diabetic Heart
- 2017 Speaker, British Cardiovascular Society (BCS) Annual Conference, Manchester, UK
Session: Diabetes and cardiovascular disease
Talk title: Oxidative stress and diabetic cardiovascular complications
- 2017 Symposium Session Organizer and Chair
Advancing Chicanos/Hispanic and Native Americans in Science (SACNAS) National Conference, Salt Lake City, Utah
Session Title: Mitochondrial Adaptations to Stress
- 2017 Department of Biochemistry & Redox Biology Center Research Seminar
University of Nebraska, Lincoln
Talk title: Mitochondrial Stress: A Novel Thermogenic Pathway to Fight Obesity and Diabetes
- 2015 Speaker, Department of Molecular Medicine Research Seminar, University of South Florida
Talk title: Mitochondrial dysfunction in obesity and diabetes
- 2015 Session Chair,
Session title: Metabolism Under Stress in Heart Disease and Diabetes
Keystone Mitochondria, Metabolism, Heart Failure (J5)
Santa Fe Community Convention Center, Santa Fe, New Mexico, USA
- 2015 Speaker, East Carolina University Diabetes and Obesity Institute Research meeting
Talk title: Mitochondrial dysfunction in obesity and diabetes
- 2014 Co-organizer of the University of Utah Metabolic Signaling Symposia
2014 - Co-organizer of the Stem Cell Affinity Seminar Series
2019

- 2014 Abstract Reviewer for the 21st Annual Meeting of the Society of Free Radical Biology Medicine (SFRBM)
- 2010 Speaker, Seattle Children Research Meeting:
Talk title: Is insulin resistance bad or good for your heart

FUNDING

Current Grants

- 07/15/20 - THE ROLE OF PRDM16 IN CARDIAC DEVELOPMENT AND
05/31/24 CARDIOMYOPATHY
Principal Investigator(s): Sihem Boudina
Direct Costs: \$564,688 Total Costs: \$2,258,752
National Heart, Lung and Blood Institute (NHLBI)
Role: Primary Investigator
- 04/01/20 - ESTABLISHING THE FUNCTION OF NOVEL HUMAN GENETIC MUTATIONS
09/30/21 IN PRDM16 USING PATIENT-DERIVED iPSC-CMs
Principal Investigator(s): Sihem Boudina
Direct Costs: \$30,000 Total Costs: \$30,000
CCTS Pilot grant
National Center for Advancing Translational Sciences (NCATS)
Role: Primary Investigator
- 08/01/21 - SMALL MOLECULE ANTAGONISTS TARGETING EPHB RECEPTORS FOR
07/31/26 THE TREATMENT OF NON-ALCOHOLIC STEATOHEPATITIS
Principal Investigator(s): Sihem Boudina
Direct Costs: \$365,147 Total Costs: \$1,825,735
National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)
Role: Multi-PI
- 07/01/18 - AUTOPHAGY MAINTAINS VASCULAR FUNCTION THROUGH A NOVEL
05/31/22 GLYCOLYSIS LINKED PATHWAY
Principal Investigator(s): Symons JD
Direct Costs: \$300,571 Total Costs: \$1,502,855
National Heart, Lung and Blood Institute (NHLBI)
Role: Co-Investigator
- 02/01/19 - MITOCHONDRIAL FUSION PROTEIN MFN2 PREVENTS PLATELET DEATH
11/30/23 AND DYSFUNCTION
Principal Investigator(s): Rowley J
Direct Costs: \$250,000 Total Costs: \$1,000,000
National Heart, Lung and Blood Institute (NHLBI)
Role: Co-Investigator

Past Grants

- 05/01/19 - BROWN ADIPOSE TISSUE STEM CELL
12/31/19
Principal Investigator(s): Sihem Boudina
Direct Costs: \$21,978 Total Costs: \$30,000
BioRestorative Therapies, Inc.
Role: Primary Investigator

09/01/16 - MNSOD IN MATURE ADIPOCYTES
08/31/19

Principal Investigator(s): Sihem Boudina
Direct Costs: \$435,000 Total Costs: \$648,150
National Institute of Diabetes and Digestive and Kidney Diseases
Role: Primary Investigator

07/01/16 - POST-DEVELOPMENTAL ADIPOCYTE AUTOPHAGY
06/30/19

Principal Investigator(s): Graham, Timothy Eugene; Sihem Boudina
Direct Costs: \$217,500 Total Costs: \$324,075
National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)
Role: Multi-PI

07/01/16 - ADIPOSE TISSUE PROGENITORS 2
06/30/18

Principal Investigator(s): Sihem Boudina
Direct Costs: \$140,000 Total Costs: \$154,000
American Heart Association Western States Affiliate
Role: Primary Investigator

07/01/15 - POST-DOCTORAL FELLOWSHIP: KARLA M. PIRES
06/30/17

Direct Costs: \$98,000 Total Costs: \$98,000
American Heart Association Western States Affiliate
Role: Primary Mentor

07/01/09 - MECHANISMS BY WHICH ROS REGULATE ADIPOGENESIS AND FAT EX
06/30/13

Principal Investigator(s): Sihem Boudina
Direct Costs: \$323,862.56 Total Costs: \$323,862.56
American Heart Association
Role: Primary Investigator

TEACHING RESPONSIBILITIES/ASSIGNMENTS

Course Lectures

2022 PI, 7040: Lab Resrch Conferences, 0, University of Utah, School of Medicine
2022 PI, 7980: Faculty Consutl-PhD, 0, University of Utah, College of Health
2022 PI, 7970: Thesis Research-Ph D, 0, University of Utah, School of Medicine
2022 PI, 7960: Special Topics-Doctoral, 0, University of Utah, College of Health
2022 PI, 7970: Dissertation-Doctoral, 0, University of Utah, College of Health
2022 PI, 7950: Indep Studies-Doctoral, 0, University of Utah, College of Health
2021 PI, 7970: Dissertation-Doctoral, 0, University of Utah, College of Health
2021 PI, 7040: Lab Resrch Conferences, 0, University of Utah, School of Medicine
2021 PI, 7950: Indep Studies-Doctoral, 0, University of Utah, College of Health
2021 PI, 6440: Macronutrient Metabolsm, 69, University of Utah, College of Health
2021 PI, 6970: Thesis Research-Masters, 0, University of Utah, College of Health
2021 PI, 7970: Thesis Research-Ph D, 0, University of Utah, School of Medicine
2021 PI, 6970: Thesis Research-Masters, 0, University of Utah, College of Health

2021 PI, 7970: Dissertation-Doctoral, 0, University of Utah, College of Health
2021 PI, 7960: Special Topics-Doctoral, 0, University of Utah, College of Health
2021 PI, 6970: Thesis Research-Masters, 0, University of Utah, College of Health
2021 PI, 7950: Indep Studies-Doctoral, 0, University of Utah, College of Health
2021 PI, 7980: Faculty Consutl-PhD, 0, University of Utah, College of Health
2021 PI, 7970: Dissertation-Doctoral, 0, University of Utah, College of Health
2021 PI, 7040: Lab Resrch Conferences, 0, University of Utah, School of Medicine
2021 PI, 7970: Thesis Research-Ph D, 0, University of Utah, School of Medicine
2020 PI, 6970: Thesis Research-Masters, 0, University of Utah, College of Health
2020 PI, 6440: Macronutrient Metabolsm, 72, University of Utah, College of Health
2020 PI, 7040: Lab Resrch Conferences, 0, University of Utah, School of Medicine
2020 PI, 7950: Indep Studies-Doctoral, 0, University of Utah, College of Health
2020 PI, 7970: Dissertation-Doctoral, 0, University of Utah, College of Health
2020 PI, 7970: Thesis Research-Ph D, 0, University of Utah, School of Medicine
2020 PI, 7970: Dissertation-Doctoral, 1, University of Utah, College of Health
2020 PI, 7960: Special Topics-Doctoral, 0, University of Utah, College of Health
2020 PI, 7980: Faculty Consutl-PhD, 0, University of Utah, College of Health
2020 PI, 7970: Dissertation-Doctoral, 1, University of Utah, College of Health
2020 PI, 7040: Lab Resrch Conferences, 0, University of Utah, School of Medicine
2020 PI, 7950: Indep Studies-Doctoral, 0, University of Utah, College of Health
2020 PI, 7970: Thesis Research-Ph D, 0, University of Utah, School of Medicine
2019 PI, 7950: Indep Studies-Doctoral, 0, University of Utah, College of Health
2019 PI, 7970: Dissertation-Doctoral, 0, University of Utah, College of Health
2019 PI, 6440: Macronutrient Metabolsm, 66, University of Utah, College of Health
2019 PI, 6970: Thesis Research-Masters, 0, University of Utah, College of Health
2019 PI, 7040: Lab Resrch Conferences, 0, University of Utah, School of Medicine
2019 PI, 7970: Dissertation-Doctoral, 0, University of Utah, College of Health
2019 PI, 7970: Thesis Research-Ph D, 0, University of Utah, School of Medicine
2019 PI, 7950: Indep Studies-Doctoral, 0, University of Utah, College of Health
2019 PI, 7970: Dissertation-Doctoral, 0, University of Utah, College of Health
2019 PI, 7960: Special Topics-Doctoral, 0, University of Utah, College of Health
2019 PI, 7040: Lab Resrch Conferences, 0, University of Utah, School of Medicine
2019 PI, 7970: Thesis Research-Ph D, 0, University of Utah, School of Medicine
2019 PI, 7980: Faculty Consutl-PhD, 0, University of Utah, College of Health
2018 PI, 7040: Lab Resrch Conferences, 0, University of Utah, School of Medicine
2018 PI, 7970: Dissertation-Doctoral, 0, University of Utah, College of Health
2018 PI, 6970: Thesis Research-Masters, 1, University of Utah, College of Health
2018 PI, 6440: Macronutrient Metabolsm, 54, University of Utah, College of Health
2018 Instructor, BIO C 7020: Biochem Res In Progress, 37 students, University of Utah, Biochemistry

2018 PI, 7970: Thesis Research-Ph D, 0, University of Utah, School of Medicine

2018 PI, 7970: Dissertation-Doctoral, 0, University of Utah, College of Health

2018 PI, 7970: Dissertation-Doctoral, 0, University of Utah, College of Health

2018 PI, 7040: Lab Resrch Conferences, 0, University of Utah, School of Medicine

2018 PI, 7980: Faculty Consutl-PhD, 0, University of Utah, College of Health

2018 PI, 7950: Indep Studies-Doctoral, 0, University of Utah, College of Health

2018 PI, 7970: Thesis Research-Ph D, 0, University of Utah, School of Medicine

2018 PI, 7960: Special Topics-Doctoral, 0, University of Utah, College of Health

2018 Instructor, BIO C 6600: Metabolic Regulation, 21 students, University of Utah, Biochemistry, Lecturer

2017 - Instructor, NUIP 6440: Metabolism of Macronutrients, University of Utah, Nutrition

2018

2017 PI, 7040: Lab Resrch Conferences, 0, University of Utah, School of Medicine

2017 PI, 7970: Dissertation-Doctoral, 0, University of Utah, College of Health

2017 PI, 7970: Thesis Research-Ph D, 0, University of Utah, School of Medicine

2017 PI, 7970: Dissertation-Doctoral, 0, University of Utah, College of Health

2017 PI, 7970: Dissertation-Doctoral, 0, University of Utah, College of Health

2017 PI, 7040: Lab Resrch Conferences, 0, University of Utah, School of Medicine

2017 PI, 7970: Thesis Research-Ph D, 0, University of Utah, School of Medicine

2017 PI, 7980: Faculty Consutl-PhD, 0, University of Utah, College of Health

2017 PI, 7950: Indep Studies-Doctoral, 0, University of Utah, College of Health

2017 PI, 7960: Special Topics-Doctoral, 0, University of Utah, College of Health

2016 PI, 7970: Thesis Research-Ph D, 0, University of Utah, School of Medicine

2016 PI, 7040: Lab Resrch Conferences, 0, University of Utah, School of Medicine

2016 PI, 7970: Thesis Research-Ph D, 0, University of Utah, School of Medicine

2016 PI, 7970, 0, University of Utah, School of Medicine

2016 PI, 7040, 0, University of Utah, School of Medicine

2016 Instructor, BIO C 6600: Metabolic Regulation, 9 students, University of Utah, Biochemistry, Lecturer

2015 Facilitator, INTMD: Circulation, Respiration, and Regulation - Cased Based Learning #6 , University of Utah, Internal Medicine, Cased Based Learning #6

2015 Facilitator, INTMD: Circulation, Respiration, and Regulation - Case Based Learning #5 , University of Utah, Internal Medicine, Case Based Learning #5

2015 Facilitator, INTMD: Circulation, Respiration, and Regulation - Case Based Learning #4, University of Utah, Internal Medicine, Case Based Learning #4

2015 Facilitator, INTMD: Circulation, Respiration, and Regulation - Case Based Learning #3, University of Utah, Internal Medicine, Case Based Learning #3

2015 Facilitator, INTMD: Circulation, Respiration, and Regulation - Case Based Learning #2, University of Utah, Internal Medicine, Case Based Learning #2

2015 PI, 7040: Lab Resrch Conferences, 0, University of Utah, School of Medicine

2015 PI, 7970: Thesis Research-Ph D, 0, University of Utah, School of Medicine

2015 PI, 7970: Thesis Research-Ph D, 0, University of Utah, School of Medicine

2015 PI, 7040: Lab Resrch Conferences, 0, University of Utah, School of Medicine

2015 PI, 7970: Thesis Research-Ph D, 0, University of Utah, School of Medicine

2014 Facilitator, INTMD: Circulation, Respiration, and Regulation - Case Based Learning H, University of Utah, Internal Medicine, Case Based Learning H

2014 Facilitator, INTMD: Circulation, Respiration, and Regulation - Case Based Learning F, University of Utah, Internal Medicine, Case Based Learning F

2014 Facilitator, INTMD: Circulation, Respiration, and Regulation - Case Based Learning E, University of Utah, Internal Medicine, Case Based Learning E

2014 Facilitator, INTMD: Circulation, Respiration, and Regulation - Case Based Learning C, University of Utah, Internal Medicine, Case Based Learning C

2014 Facilitator, INTMD: Circulation, Respiration, and Regulation - Case Based Learning B, University of Utah, Internal Medicine, Case Based Learning B

2014 Facilitator, INTMD: Circulation, Respiration, and Regulation - Case Based Learning A, University of Utah, Internal Medicine, Case Based Learning A

2014 PI, 7040: Lab Resrch Conferences, 0, University of Utah, School of Medicine

2014 PI, 7970: Thesis Research-Ph D, 0, University of Utah, School of Medicine

2014 Instructor, Case Based Learning 6, : MS2017 MCC - Case Based Learning 6

2014 Facilitator, INTMD: Molecules, Cells, and Cancer - Case Based Learning-6, University of Utah, Internal Medicine, Case Based Learning-6

2014 Instructor, Case Based Learning 4, : MS2017 MCC - Case Based Learning 4

2014 Facilitator, INTMD: Molecules, Cells, and Cancer - Case Based Learning-4, University of Utah, Internal Medicine, Case Based Learning-4

2014 Instructor, Case Based Learning 3, : MS2017 MCC - Case Based Learning 3

2014 Facilitator, INTMD: Molecules, Cells, and Cancer - Case Based Learning-3, University of Utah, Internal Medicine, Case Based Learning-3

2014 Instructor, Case Based Learning 1, : MS2017 MCC - Case Based Learning 1

2014 Facilitator, INTMD: Molecules, Cells, and Cancer - CBL-1, University of Utah, Internal Medicine, CBL-1

10/7/2013 Instructor, BIO2870: Faculty Research Seminar, 20 students, University of Utah, Biology

9/19/2011 Instructor, BIOL 2870: Faculty Research Seminar, University of Utah, Biology

November Instructor, ESS 6384: Adv Cardio Phys, 6 students, University of Utah, Exercise and 17th 2010 Sport Science

Trainee Supervision

Faculty

Present Advisor/Mentor, Rajeshwary Ghosh, University of Utah, Project Title: The role of sequestosome 1/p62 in cardiac function.

Fellow

Present Supervisor, Jacob Garritson, University of Utah, Project Title: The role of BMPER in adipose tissue.

- 2018 - Advisor/Mentor, Maroua Ferhat, University of Utah, Project: Adipose progenitors
2019 and the development of visceral obesity
- 2016 - Supervisor, Sara Ortega, University of Utah, The role of oxidative stress in mitophagy
2019 and brown adipose tissue function
- 2016 Supervisor, Youn Jeong Choi, University of Utah, Dr. Choi is elucidating the
mechanisms underlying adipose browning by Oct1 transcription factor
- 2014 - Advisor/Mentor, Janaina Paulini Aguiar, University of São Paulo Medical School,
2015 Janaina is working on the effect of hyperinsulinemia on cardiac protection by
ischemic preconditioning
- 2013 - Advisor/Mentor, Gabriela Silva Monteiro de Paula, Federal University of Rio de
2014 Janeiro, Project: The role of neuromedin B in adipose tissue function
- 2013 - Advisor/Mentor, Samuel Valenca, Rio de Janeiro State University (UERJ), Redox-
2014 regulation of white adipose progenitor cell proliferation and differentiation
- 2012 - Supervisor, Karla Pires, University of Utah, Project: Insulin resistance and autophagy
2019 regulation during cardiac aging
- 2012 - Supervisor, YongHwan Han, University of Utah, Post-doctoral fellow
2015 Project: The impact of fat-specific deletion of SOD2 on white adipose tissue function
and whole-body insulin sensitivity
- 2011 - Supervisor, Olesya Ilkun, University of Utah, Post-doctoral Fellow
2013 Project: Proteomic and Metabolomic Profiling of Redox-Dependent Pathways
Regulating White Adipose Progenitor Cells Proliferation and Differentiation
Trainee's Current Career Activities: 1st year medical student, University of Utah
- 2011 - Supervisor, Shaobo Pei, University of Utah, Post-doctoral fellow
2014 Project: The role of SOD2 in brain function
- 2010 Supervisor, Ali Tebbi, University of Utah, Post-doctoral Fellow
Project: The role of SOD2 in body weight and energy expenditure regulation
Trainee's Current Career Activities: Research Associate, Pathogenesis of Hepatitis B
Virus Unit, Department of Virology
Institut Pasteur, France
- 2010 - Supervisor, Crystal Sloan, University of Utah, Post-doctoral fellow
2011 Project: Regulation of cardiac autophagy by the insulin signaling pathway
Trainee's Current Career Activities: Stay at home mom

PhD/Doctorate

- 2021- Mentor/Advisor, Omid T Rouzbehani, NUIP, College of Health, University of Utah
Present
- 2021- Mentor/Advisor, Jiabi Zhang, NUIP, College of Health, University of Utah
Present
- 2018 - Co-Mentor, Alan Achenbach, University of Utah, Project Title: Characterization of
Present novel cell surface markers for adipose progenitors in visceral fat of human and mice.

2013 - Supervisor, Tanya Forostyan, University of Utah, Project: The role of the retinol
2018 transporter Stra6L in adipose tissue inflammation

MD, PhD

2003-2007 Supervisor, Brian O'Neil, University of Utah, Project: Regulation of substrate
utilization and mitochondrial function
by PI3-Kinase and Akt.

Trainee's Current Career Activities: Instructor in Medicine, Joslin Diabetes Center,
Boston

Masters

2019 - Advisor/Mentor, Vishaka Vinod, University of Utah, Project Title: The role of
2021 Prdm16 in left ventricular non-compaction cardiomyopathy

2018 Supervisor, Alicia Youlton, University of Utah, Project: Redox regulation of
thermogenesis

Medical Student

2021 Advisor/Mentor, Ellenor Chi, University of Utah Medical Student Research Program,
Project: The post-developmental role of Prdm16 in the heart.

2019 Advisor/Mentor, Sidney Vowles, University of Utah Medical Student Research
Program, Project: Characterizing the phenotype of germline deletion of Prdm16 in the
heart.

2012 Advisor/Mentor, Kristina Evans, University of Utah, Project: The role of manganese
superoxide dismutase (MnSOD) in white adipose tissue progenitor's differentiation
using SiRNA knockdown strategy.

Trainee's Current Career Activities: 3rd year Medical Student, University of Utah

2011 Supervisor, Donya Mohebbi, University of Utah, Medical Student Summer Research
Project: The Role of Radical Oxygen Species in Diet-Induced Obesity

Trainee's Current Career Activities: 4th year Medical Student, University of Utah

2005 Supervisor, Salwa Abdel Aziz, University of Utah, Project: The effects of increased
oxidative damage and FA-induced mitochondrial uncoupling on cardiac function of
obese diabetic (db/db) mice

Trainee's Current Career Activities: Ophthalmology Resident, University of
Pittsburgh Medical Center

2005-2007 Supervisor, Kimberly Fountain, University of Utah, Project: Regulation of
mitochondrial function by the insulin signaling pathway in skeletal muscle.

Trainee's Current Career Activities: Internal Medicine Physician, Memphis, TN

2004 Supervisor, Eric Palfreyman, University of Utah, Project: the effect of increased fatty
acid utilization on mitochondrial function in insulin resistant hearts.

Trainee's Current Career Activities: Rheumatology Physician, Idaho Arthritis Center

Undergraduate

- 2021 Advisor/Mentor, Hamoda Yaser, University of Utah, Project Title: Visceral Adipose Progenitors Characterization
- 2021 Advisor/Mentor, Isaac D. Cao, University of Utah, Project Title: Understanding the role of p62 in hypoxic stress in the heart.
- 2020-Present Advisor/Mentor, Tala Hammond, University of Utah, Project Title: Redox-modulation of thermogenesis in mice.
- 2020-Present Advisor/Mentor, Amir Nima Fatahian, University of Utah, Project Title: Adipose autophagy and insulin resistance.
- 2019 Advisor/Mentor, Emile Eich, The University of Utah NARI Program, Project: Optimizing lipoid staining in primary visceral adipose progenitors.
- 2016 - 2018 Advisor/Mentor, William West, University of Utah, Investigate the role of redox in the regulation of mitochondrial uncoupling
- 2017 Advisor/Mentor, Shane Littlefoot, The University of Utah NARI Program, Project: Metabolic flux analysis in primary brown adipocytes
- 2016 Advisor/Mentor, River Gunville, University of Utah NARI Program, Project: Modeling systemic hyperinsulinemia in cultured cells for the study of Cardiac autophagy
- 2015 Supervisor, Saydie Sago, University of Utah Native American Research Internship (NARI) Program, Project: The role of autophagy in the insulin resistant heart
- 2015 - 2017 Supervisor, Katarina Mountz, University of Utah, Katarina is part of the Undergraduate Research Program working on adipose progenitors from different fat depots in mice.
- 2014 - 2015 Supervisor, Katie Lami, University of Utah, Katie was sponsored by the University of Utah Undergraduate Research Opportunity Program for two semesters and she was working on the role of IGF-1 signaling in the regulation of cardiac autophagy
- 2014 - 2015 Supervisor, Zane Blank, University of Utah, Zane is working on adipose progenitor cells
- 2014 Advisor/Mentor, Shiann Dreadfulwater, University of Utah, Shiann is part of the Native American Research Internship Program. She is working on the effect of hyperinsulinemia on cardiac autophagy.
- 2014 - 2015 Supervisor, Abhilasha Manandhar, University of Utah, the student worked on adipose tissue progenitors
- 2014 - 2015 Supervisor, Khanh Cao, University of Utah, the student worked on the role of MnSOD in fat expansion
- 2014 Supervisor, Ikram Raed, University of Utah, Project: LC3 pancta quantification in frozen heart sections
- 2013 - 2014 Supervisor, Sean William Brough, University of Utah, Project: Genotyping mitochondria-targeted catalase transgenic mice
- 2013 - 2014 Supervisor, Sahar Dastghaib, University of Utah, Project: Superoxide detection in frozen brain sections
- 2013 Supervisor, Fiorella Mollozibetti, University of Utah, Project: ROS generation and mitochoindrial function in brain-specific MnSOD knockout mice

- 2013 Supervisor, Marina Valente, University of Utah, Project: The role of MnSOD in differentiation of 3T3L1 preadipocytes
- 2012 - Supervisor, Braedon Murdock, University of Utah, Project: The role of Oct1 in adipogenesis
- 2012 - Supervisor, Andrea Myers, University of Utah, Project: Generation of mCherry total insulin receptor knockout mice
- 2011 - Supervisor, Michael Hofer, University of Utah, Project: Generation of tissue-specific knockouts of SOD2
- 2011 - Supervisor, Justin Peck, University of Utah, Project: Phenotyping of the brain-specific SOD2 knockout mice.
- 2011 - Supervisor, Seyran Saber, University of Utah, Project: Generation of fat-specific SOD2 knockout mice
- 2011 - Supervisor, Robert Manzanares, University of Utah, Project: Mechanism of cardioprotection regulated through insulin signaling pathway
Trainee's Current Career Activities: Student, University of Utah
- 2009 - Supervisor, Xu Shane Liu, University of Utah, Project: Mechanisms for impaired cardioprotection by insulin.
- 2009 Supervisor, Assad Rauf, University of Utah, Project: GLUT4 translocation in response to insulin in the heart of UCP3 knockout mice fed high fat diet.
- 2009 Supervisor, Donya Mohebali, University of Utah, Project: Diet-induced adipogenesis in superoxide dismutase 2 heterozygous mice
- 2009 - Supervisor, Tanner Fullmer, University of Utah, Project: The role of insulin signaling in ischemic preconditioning
- 2008-2009 Supervisor, Timothy Tidwell, University of Utah, Project: Insulin signaling in the heart of UCP3 knockout mice.
- 2008 Supervisor, Calvin Stone, University of Utah, Project: Characterization of mitochondrial function in HF-fed UCP3 knockout mice.
- 2004-2006 Supervisor, Jordan Wright, University of Utah, Project: Mechanisms responsible for altered cardiac metabolism in diet-induced obesity
- 2003 Supervisor, Jenny Billy, University of Utah, Project: Determination of reactive oxygen generation and aconitase activity in insulin resistant mouse heart.

High School

- 2016 Supervisor, Jonathan Shipp, Morphometric analysis of adipocyte number and diameter in aging mice
- 2015 Supervisor, Paige Davis, University of Utah, Paige was a high school student participating in the Summer High School Students/Bioscience Research program. She worked on adipose stem cells differentiation.

- 2013 Supervisor, David Ho, University of Utah, Project: Protein carbonylation in MnSOD deleted cells.
- 2012 Supervisor, Chandler Whitlock, University of Utah, project: Characterizing the brain-specific manganese superoxide dismutase knockout mice
- 2011 Supervisor, Alina Tran, University of Utah, Project: Generation of brain-specific SOD2 knockout

Graduate Student Committees

- 2020- Present Member, Sean Tatum, NUIP, College of Health, University of Utah
- 2019- Present Member, Lacie M. Peterson, NUIP, College of Health, University of Utah
- 2017-2021 Member, Trevor S. Tippetts, NUIP, College of Health, University of Utah
- 2017- Present Member, Jae Min Cho, NUIP, College of Health, University of Utah
- 2020-2021 Chair, Vishaka Vinod, University of Utah
- 2015-2020 Member, Jordan Johnson, NUIP, College of Health, University of Utah
- 2013-2018 Chair, Tanya Forostyan, Oncological Sciences, University of Utah
- 2017-2019 Chair, Alicia Youlton, NUIP, College of Health, University of Utah
- 2013-2018 Member, Rana Smalling, Biochemistry, University of Utah

University Committees

- 2021-Present University of Utah MD/PhD Admission Committee Chair
- 2020- Present. University of Utah Diabetes Metabolism Research Center (DMRC) Steering Committee Member
- 2020-2021 University of Utah MD/PhD Admission Committee Member
- 2020-Present University of Utah Bioscience PhD Program Steering Committee Member
- 2020-Present College of health Research Committee Member
- 2017-Present College of Health Equity, Diversity and Inclusion Committee Member
- 2013-2016 University of Utah Medical School Admission Committee Member

Educational Seminars

- 2013 - 2016 Organizer, Stem Cell Affinity Group
- 2013 - Present Participant, Seminar in Metabolism
- 2009 - 2013 Co-founder/ Participant, Metabolism Interest Group (MIG)

PEER-REVIEWED JOURNAL ARTICLES

1. Ghosh R, Vinod V, Symons JD, **Boudina S** (2020). Protein and Mitochondria Quality Control Mechanisms and Cardiac Aging. *Cells*, 9(4).

2. Buffolo M, Pires KM, Ferhat M, Ilkun O, Makaju A, Achenbach A, Bowman F, Atkinson DL, Holland WL, Amri EZ, Chaurasia B, Franklin S, **Boudina S** (2019). Identification of a Paracrine Signaling Mechanism Linking CD34^{high} Progenitors to the Regulation of Visceral Fat Expansion and Remodeling. *Cell Rep*, 29(2), 270-282.e5.
3. Tian R, Colucci WS, Arany Z, Bachschmid MM, Ballinger SW, **Boudina S**, Bruce JE, Busija DW, Dikalov S, Dorn GW II, Galis ZS, Gottlieb RA, Kelly DP, Kitsis RN, Kohr MJ, Levy D, Lewandowski ED, McClung JM, Mochly-Rosen D, O'Brien KD, O'Rourke B, Park JY, Ping P, Sack MN, Sheu SS, Shi Y, Shiva S, Wallace DC, Weiss RG, Vernon HJ, Wong R, Schwartz Longacre L (2019). Unlocking the Secrets of Mitochondria in the Cardiovascular System: Path to a Cure in Heart Failure—A Report from the 2018 National Heart, Lung, and Blood Institute Workshop. *Circulation*, 140(14), 1205-1216.
4. Heden TD, Johnson JM, Ferrara PJ, Eshima H, Verkerke ARP, Wentzler EJ, Siripoksup P, Narowski TM, Coleman CB, Lin CT, Ryan TE, Reidy PT, de Castro Brás LE, Karner CM, Burant CF, Maschek JA, Cox JE, Mashek DG, Kardon G, **Boudina S**, Zeczycki TN, Rutter J, Shaikh SR, Vance JE, Drummond MJ, Neuffer PD, Funai K (2019). Mitochondrial PE potentiates respiratory enzymes to amplify skeletal muscle aerobic capacity. *Sci Adv*, 5(9), eaax8352.
5. Ferhat M, Funai K, **Boudina S** (2018). Autophagy in Adipose Tissue Physiology and Pathophysiology. *Antioxid Redox Signal*, 31(6), 487-501.
6. Pires KM, Torres NS, Buffolo M, Gunville R, Schaaf C, Davis K, Selzman CH, Gottlieb RA, **Boudina S** (2019). Suppression of Cardiac Autophagy by Hyperinsulinemia in Insulin Receptor-Deficient Hearts Is Mediated by Insulin-Like Growth Factor Receptor Signaling. *Antioxid Redox Signal*, 31(6), 444-457.
7. Petersen C, Bell R, Klag KA, Lee SH, Soto R, Ghazaryan A, Buhrke K, Ekiz HA, Ost KS, **Boudina S**, O'Connell RM, Cox JE, Villanueva CJ, Stephens WZ, Round JL (2019). T cell-mediated regulation of the microbiota protects against obesity. *Science*, 365(6451).
8. de Paula GSM, Wilieman M, Silva KR, Baptista LS, **Boudina S**, de Souza LL, Bento-Bernardes T, Asensi KD, Goldenberg RCDS, Pazos-Moura CC (2019). Neuromedin B receptor disruption impairs adipogenesis in mice and 3T3-L1 cells. *J Mol Endocrinol*, 63(1), 93-102.
9. Runtsch MC, Nelson MC, Lee SH, Voth W, Alexander M, Hu R, Wallace J, Petersen C, Panic V, Villanueva CJ, Evason KJ, Bauer KM, Mosbrugger T, **Boudina S**, Bronner M, Round JL, Drummond MJ, O'Connell RM (2019). Anti-inflammatory microRNA-146a protects mice from diet-induced metabolic disease. *PLoS Genet*, 15(2), e1007970.
10. Park SK, La Salle DT, Cerbie J, Cho JM, Bledsoe A, Nelson A, Morgan DE, Richardson RS, Shiu YT, **Boudina S**, Trinity JD, Symons JD (2019). Elevated arterial shear rate increases indexes of endothelial cell autophagy and nitric oxide synthase activation in humans. *Am J Physiol Heart Circ Physiol*, 316(1), H106-H112.
11. Cai J, Pires KM, Ferhat M, Chaurasia B, Buffolo MA, Smalling R, Sargsyan A, Atkinson DL, Summers SA, Graham TE, **Boudina S** (2018). Autophagy Ablation in Adipocytes Induces Insulin Resistance and Reveals Roles for Lipid Peroxide and Nrf2 Signaling in Adipose-Liver Crosstalk. *Cell Rep*, 25(7), 1708-1717.e5.
12. Warren JS, Tracy CM, Miller MR, Makaju A, Szulik MW, Oka SI, Yuzyuk TN, Cox JE, Kumar A, Lozier BK, Wang L, Llana JG, Sabry AD, Cawley KM, Barton DW, Han YH, **Boudina S**, Fiehn O, Tucker HO, Zaitsev AV, Franklin S (2018). Histone methyltransferase Smyd1 regulates mitochondrial energetics in the heart. *Proc Natl Acad Sci U S A*, 115(33), E7871-E7880.

13. Pires KM, Buffolo M, Schaaf C, David Symons J, Cox J, Abel ED, Selzman CH, **Boudina S** (2017). Activation of IGF-1 receptors and Akt signaling by systemic hyperinsulinemia contributes to cardiac hypertrophy but does not regulate cardiac autophagy in obese diabetic mice. *J Mol Cell Cardiol*, 113, 39-50.
14. Bharath LP, Cho JM, Park SK, Ruan T, Li Y, Mueller R, Bean T, Reese V, Richardson RS, Cai J, Sargsyan A, Pires K, Anandh Babu PV, **Boudina S**, Graham TE, Symons JD (2017). Endothelial Cell Autophagy Maintains Shear Stress-Induced Nitric Oxide Generation via Glycolysis-Dependent Purinergic Signaling to Endothelial Nitric Oxide Synthase. *Arterioscler Thromb Vasc Biol*, 37(9), 1646-1656.
15. Ortega SP, Chouchani ET, **Boudina S** (2017). Stress turns on the heat: Regulation of mitochondrial biogenesis and UCP1 by ROS in adipocytes. *Adipocyte*, 6(1), 56-61.
16. Han YH, Buffolo M, Pires KM, Pei S, Scherer PE, **Boudina S** (2016). Adipocyte-Specific Deletion of Manganese Superoxide Dismutase Protects From Diet-Induced Obesity Through Increased Mitochondrial Uncoupling and Biogenesis. *Diabetes*, 65(9), 2639-51.
17. Park H, Cho S, Han YH, Janat-Amsbury MM, **Boudina S**, Bae YH (2015). Combinatorial gene construct and non-viral delivery for anti-obesity in diet-induced obese mice. *J Control Release*, 207, 154-62.
18. **Boudina S**, Graham TE (2014). Mitochondrial function/dysfunction in white adipose tissue. *Exp Physiol*, 99(9), 1168-78.
19. Silva FJ, Holt DJ, Vargas V, Yockman J, **Boudina S**, Atkinson D, Grainger DW, Revelo MP, Sherman W, Bull DA, Patel AN (2014). Metabolically active human brown adipose tissue derived stem cells. *Stem Cells*, 32(2), 572-81.
20. Pires KM, Ilkun O, Valente M, **Boudina S** (2014). Treatment with a SOD mimetic reduces visceral adiposity, adipocyte death, and adipose tissue inflammation in high fat-fed mice. *Obesity (Silver Spring)*, 22(1), 178-87.
21. Fullmer TM, Pei S, Zhu Y, Sloan C, Manzanares R, Henrie B, Pires KM, Cox JE, Abel ED, **Boudina S** (2013). Insulin suppresses ischemic preconditioning-mediated cardioprotection through Akt-dependent mechanisms. *J Mol Cell Cardiol*, 64, 20-9.
22. Dodson MV, **Boudina S**, Albrecht E, Bucci L, Culver MF, Wei S, Bergen WG, Amaral AJ, Moustaid-Moussa N, Poulos S, Hausman GJ (2013). A long journey to effective obesity treatments: is there light at the end of the tunnel? [Review]. *Exp Biol Med (Maywood)*, 238, (5), 491-501.
23. Ilkun O, **Boudina S** (2013). Cardiac dysfunction and oxidative stress in the metabolic syndrome: an update on antioxidant therapies. *Curr Pharm Des*, 19(27), 4806-17.
24. **Boudina S** (2013). Cardiac aging and insulin resistance: could insulin/insulin-like growth factor (IGF) signaling be used as a therapeutic target? *Curr Pharm Des*, 19(32), 5684-94.
25. **Boudina S**, Han YH, Pei S, Tidwell TJ, Henrie B, Tuinei J, Olsen C, Sena S, Abel ED (2012). UCP3 regulates cardiac efficiency and mitochondrial coupling in high fat-fed mice but not in leptin-deficient mice. *Diabetes*, 61(12), 3260-9.
26. Bricker DK, Taylor EB, Schell JC, Orsak T, Boutron A, Chen YC, Cox JE, Cardon CM, Van Vranken JG, Dephoure N, Redin C, **Boudina S**, Gygi SP, Brivet M, Thummel CS, Rutter J (2012). A mitochondrial pyruvate carrier required for pyruvate uptake in yeast, *Drosophila*, and humans. *Science*, 337(6090), 96-100.

27. **Boudina S**, Sena S, Sloan C, Tebbi A, Han YH, O'Neill BT, Cooksey RC, Jones D, Holland WL, McClain DA, Abel ED (2012). Early mitochondrial adaptations in skeletal muscle to diet-induced obesity are strain dependent and determine oxidative stress and energy expenditure but not insulin sensitivity. *Endocrinology*, 153(6), 2677-88.
28. Bugger H, Riehle C, Jaishy B, Wende AR, Tuinei J, Chen D, Soto J, Pires KM, **Boudina S**, Theobald HA, Luptak I, Wayment B, Wang X, Litwin SE, Weimer BC, Abel ED (2012). Genetic loss of insulin receptors worsens cardiac efficiency in diabetes. *J Mol Cell Cardiol*, 52(5), 1019-26.
29. Li Y, Wende AR, Nunthakungwan O, Huang Y, Hu E, Jin H, **Boudina S**, Abel ED, Jalili T (2012). Cytosolic, but not mitochondrial, oxidative stress is a likely contributor to cardiac hypertrophy resulting from cardiac specific GLUT4 deletion in mice. *FEBS J*, 279(4), 599-611.
30. Ishiwata T, Orosz A, Wang X, Mustafi SB, Pratt GW, Christians ES, **Boudina S**, Abel ED, Benjamin IJ (2012). HSPB2 is dispensable for the cardiac hypertrophic response but reduces mitochondrial energetics following pressure overload in mice. *PLoS ONE*, 7(8), e42118.
31. **Boudina S**, Abel ED (2010). Diabetic cardiomyopathy, causes and effects. *Rev Endocr Metab Disord*, 11(1), 31-9.
32. Singhal AK, Symons JD, **Boudina S**, Jaishy B, Shiu YT (2010). Role of Endothelial Cells in Myocardial Ischemia-Reperfusion Injury. *Vascular Disease Prevention*, 7, 1-14.
33. Wright JJ, Kim J, Buchanan J, **Boudina S**, Sena S, Bakirtzi K, Ilkun O, Theobald HA, Cooksey RC, Kandror KV, Abel ED (2009). Mechanisms for increased myocardial fatty acid utilization following short-term high-fat feeding. *Cardiovasc Res*, 82(2), 351-60.
34. **Boudina S**, Bugger H, Sena S, O'Neill BT, Zaha VG, Ilkun O, Wright JJ, Mazumder PK, Palfreyman E, Tidwell TJ, Theobald H, Khalimonchuk O, Wayment B, Sheng X, Rodnick KJ, Centini R, Chen D, Litwin SE, Weimer BE, Abel ED (2009). Contribution of impaired myocardial insulin signaling to mitochondrial dysfunction and oxidative stress in the heart. *Circulation*, 119(9), 1272-83.
35. Bugger H, **Boudina S**, Hu XX, Tuinei J, Zaha VG, Theobald HA, Yun UJ, McQueen AP, Wayment B, Litwin SE, Abel ED (2008). Type 1 diabetic akita mouse hearts are insulin sensitive but manifest structurally abnormal mitochondria that remain coupled despite increased uncoupling protein 3. *Diabetes*, 57(11), 2924-32.
36. Lehman JJ, **Boudina S**, Banke NH, Sambandam N, Han X, Young DM, Leone TC, Gross RW, Lewandowski ED, Abel ED, Kelly DP (2008). The transcriptional coactivator PGC-1alpha is essential for maximal and efficient cardiac mitochondrial fatty acid oxidation and lipid homeostasis. *Am J Physiol Heart Circ Physiol*, 295(1), H185-96.
37. Jouihan HA, Cobine PA, Cooksey RC, Hoagland EA, **Boudina S**, Abel ED, Winge DR, McClain DA (2008). Iron-mediated inhibition of mitochondrial manganese uptake mediates mitochondrial dysfunction in a mouse model of hemochromatosis. *Mol Med*, 14(3-4), 98-108.
38. Benjamin IJ, Guo Y, Srinivasan S, **Boudina S**, Taylor RP, Rajasekaran NS, Gottlieb R, Wawrousek EF, Abel ED, Bolli R (2007). CRYAB and HSPB2 deficiency alters cardiac metabolism and paradoxically confers protection against myocardial ischemia in aging mice. *Am J Physiol Heart Circ Physiol*, 293(5), H3201-9.

39. **Boudina S**, Sena S, Theobald H, Sheng X, Wright JJ, Hu XX, Aziz S, Johnson JJ, Bugger H, Zaha VG, Abel ED (2007). Mitochondrial energetics in the heart in obesity-related diabetes: direct evidence for increased uncoupled respiration and activation of uncoupling proteins. *Diabetes*, 56 (10), 2457-66.
40. O'Neill BT, Kim J, Wende AR, Theobald HA, Tuinei J, Buchanan J, Guo A, Zaha VG, Davis DK, Schell JC, **Boudina S**, Wayment B, Litwin SE, Shioi T, Izumo S, Birnbaum MJ, Abel ED (2007). A conserved role for phosphatidylinositol 3-kinase but not Akt signaling in mitochondrial adaptations that accompany physiological cardiac hypertrophy. *Cell Metab*, 6(4), 294-306.
41. Hao HX, Cardon CM, Swiatek W, Cooksey RC, Smith TL, Wilde J, **Boudina S**, Abel ED, McClain DA, Rutter J (2007). PAS kinase is required for normal cellular energy balance. *Proc Natl Acad Sci U S A*, 104(39), 15466-71.
42. **Boudina S**, Abel ED (2007). Diabetic cardiomyopathy revisited. *Circulation*, 115(25), 3213-23.
43. Sano M, Izumi Y, Helenius K, Asakura M, Rossi DJ, Xie M, Taffet G, Hu L, Pautler RG, Wilson CR, **Boudina S**, Abel ED, Taegtmeier H, Scaglia F, Graham BH, Kralli A, Shimizu N, Tanaka H, Mäkelä TP, Schneider MD (2007). Ménage-à-trois 1 is critical for the transcriptional function of PPARgamma coactivator 1. *Cell Metab*, 5(2), 129-42.
44. Lelliott CJ, Medina-Gomez G, Petrovic N, Kis A, Feldmann HM, Bjursell M, Parker N, Curtis K, Campbell M, Hu P, Zhang D, Litwin SE, Zaha VG, Fountain KT, **Boudina S**, Jimenez-Linan M, Blount M, Lopez M, Meirhaeghe A, Bohlooly-Y M, Storlien L, Strömstedt M, Snaith M, Oresic M, Abel ED, Cannon B, Vidal-Puig A (2006). Ablation of PGC-1beta results in defective mitochondrial activity, thermogenesis, hepatic function, and cardiac performance. *PLoS Biol*, 4(11), e369.
45. **Boudina S**, Abel ED (2006). Mitochondrial uncoupling: a key contributor to reduced cardiac efficiency in diabetes. *Physiology (Bethesda)*, 21, 250-8.
46. **Boudina S**, Sena S, O'Neill BT, Tathireddy P, Young ME, Abel ED (2005). Reduced mitochondrial oxidative capacity and increased mitochondrial uncoupling impair myocardial energetics in obesity. *Circulation*, 112(17), 2686-95.
47. Leone TC, Lehman JJ, Finck BN, Schaeffer PJ, Wende AR, **Boudina S**, Courtois M, Wozniak DF, Sambandam N, Bernal-Mizrachi C, Chen Z, Holloszy JO, Medeiros DM, Schmidt RE, Saffitz JE, Abel ED, Semenkovich CF, Kelly DP (2005). PGC-1alpha deficiency causes multi-system energy metabolic derangements: muscle dysfunction, abnormal weight control and hepatic steatosis. *PLoS Biol*, 3(4), e101.
48. Mazumder PK, O'Neill BT, Roberts MW, Buchanan J, Yun UJ, Cooksey RC, **Boudina S**, Abel ED (2004). Impaired cardiac efficiency and increased fatty acid oxidation in insulin-resistant ob/ob mouse hearts. *Diabetes*, 53(9), 2366-74.
49. Dos Santos P, Laclau MN, **Boudina S**, Garlid KD (2004). Alterations of the bioenergetics systems of the cell in acute and chronic myocardial ischemia. *Mol Cell Biochem*, 256-257(1-2), 157-66.
50. Dos Santos P, Kowaltowski AJ, Laclau MN, Seetharaman S, Paucek P, **Boudina S**, Thambo JB, Tariosse L, Garlid KD (2002). Mechanisms by which opening the mitochondrial ATP- sensitive K(+) channel protects the ischemic heart. *Am J Physiol Heart Circ Physiol*, 283(1), H284-95.
51. Ducret T, **Boudina S**, Sorin B, Vacher AM, Gourdou I, Liguoro D, Guerin J, Bresson-Bepoldin L, Vacher P (2002). Effects of prolactin on intracellular calcium concentration and cell proliferation in human glioma cells. *Glia*, 38(3), 200-14.

52. **Boudina S**, Laclau MN, Tariosse L, Daret D, Gouverneur G, Bonoron-Adèle S, Saks VA, Dos Santos P (2002). Alteration of mitochondrial function in a model of chronic ischemia in vivo in rat heart. *Am J Physiol Heart Circ Physiol*, 282(3), H821-31.
53. Laclau MN, **Boudina S**, Thambo JB, Tariosse L, Gouverneur G, Bonoron-Adele S, Saks VA, Garlid KD, Dos Santos P (2001). Cardioprotection by ischemic preconditioning preserves mitochondrial function and functional coupling between adenine nucleotide translocase and creatine kinase. *J Mol Cell Cardiol*, 33(5), 947-56.

NON-PEER-REVIEWED JOURNAL ARTICLES

1. S. Boudina (2009). Clinical manifestation of diabetic cardiomyopathy. *Heart Metab*, 45(2009), 10-14.

BOOK CHAPTERS

1. Autophagy in Health and Disease, 2st Edition
Chapter 13: Autophagy in Adipose Tissue
Editors: Beverly Rothermel and Abhinav Diwan
Elsevier (*in Press*)
2. Mitochondria in Obesity and Type 2 Diabetes, 1st Edition
Chapter 10: Role of Mitochondria in Cardiovascular Co-Morbidities Associated with Obesity and Type 2 Diabetes.
Editors: Beatrice Morio Luc Penicaud and Michel Rigoulet
Elsevier 2019

POSTER PRESENTATIONS

- 2018 Karla M. Pires, Marcio Buffolo and Sihem Boudina. *Cardiac-specific Deletion Of P62/ Sequestosome1 (sqstm1) Accelerates Cardiac Aging And Enhances Oxidative Stress*. Poster session presented at American Heart Association Scientific Session, Chicago Illinois.
- 2017 Sara Palacios-Ortega, Marcio Buffolo, Karla Maria Pires and Sihem Boudina. (2017). Mitochondrial Stress: A Novel Thermogenic Pathway to Fight Obesity and Diabetes [Abstract]. *Obesity and Adipose Tissue Biology (J4)*. Keystone Symposia. Keystone, Colorado, USA.
- 2017 Tetyana Forostyan, Karla Pires, Marcio Buffalo, Lilly Kanishka, Timothy Graham, Sihem Boudina. *Deletion of the RBP4 receptor STRA6L in CD11c+ immune cells protect mice from diet-induced glucose intolerance and insulin resistance*. Poster session presented at Keystone Resort, Keystone, Colorado Discounted Registration Deadline: November 22, 2016, Colorado.
- 2016 Karla Maria Pires, Olesya Ilkun, Maricio Augusto Buffolo, Shaobo Pei, E. Dale Abel and Sihem Boudina. *Activation of IGF-1 receptor signaling by hyperinsulinemia suppresses cardiac autophagy through TRB3/p62 pathway*.

- 2016 Yong Hwan Han, Márcio Buffolo, Karla Maria Pires, Shaobo Pei and Sihem Boudina. *Mitochondrial Stress: A Novel Pathway to Activate Thermogenesis in Fat* . Poster session presented at MITOCHONDRIAL BIOLOGY SYMPOSIUM: NOVEL ROLES OF MITOCHONDRIA IN HEALTH AND DISEASE, NATIONAL INSTITUTE OF HEALTH, BETHESDA, MARYLAND.
- 2016 Karla Maria Pires, Olesya Ilkun, Marcio Buffolo, Shaobo Pei and Sihem Boudina. *Hyperinsulinemia signals through the IGF1-ERK pathway to suppress autophagy in the insulin resistant heart*. Poster session presented at MITOCHONDRIAL BIOLOGY SYMPOSIUM: NOVEL ROLES OF MITOCHONDRIA IN HEALTH AND DISEASE, NATIONAL INSTITUTE OF HEALTH, BETHESDA, MARYLAND.
- 2013 Yong Hwan Han, Shaobo Pei and Sihem Boudina. *Adipose-specific deletion of manganese superoxide dismutase impairs adipogenesis in mice*. Poster session presented at Keystone Symposia: Adipose Tissue Biology (J5), Keystone, Colorado.
- 2012 Y Han, S Pei, B Henrie, S Boudina. *The Role of Manganese Superoxide Dismutase in Diet-Induced Fat Expansion*. Poster session presented at Keystone Symposia: Genetic and Molecular Basis of Obesity and Body Weight Regulation, Santa Fe, New Mexico.
- 2011 Crystal Sloan, Brandon W. Henrie, Xu S. Liu, Jamie Soto, Curtis D. Olsen, Sheldon E. Litwin, E. Dale Abel and Sihem Boudina. *Insulin Receptor Deletion in the Mouse heart Prevents Cardiac Aging Despite Reduced Autophagy*. Poster session presented at 9th Annual Scientific Sessions of Society for Heart and Vascular Metabolism, Brussels, Belgium.
- 2011 S Boudina, C Sloan, B Henrie, X Liu, J Soto, C Olsen, S Litwin, E Abel. *Insulin Receptors Deletion in the Mouse Heart Increases Autophagy and Prevents Age-Associated Decline in Cardiac Function*. Poster session presented at Keystone Symposia: Autophagy, Whistler, British Columbia.
- 2010 B. Henrie, X. Liu, J. Soto, C. Olsen, S. Litwin, D. Abel and S. Boudina. *Insulin receptors Deletion in the Mouse Heart Prevents Age-Associated Decline in Cardiac and Mitochondrial Function*. Poster session presented at 8th Annual Scientific Sessions of Society for Heart and Vascular Metabolism, Kananaskis, Alberta, Canada.
- 2009 Sihem Boudina, Sandra Sena, Robert C. Cooksey, Deborah Jones, Jamie Soto, Heather Theobald, Donald A. McClain, E. Dale Abel. *Mitochondrial Dysfunction Precedes Insulin Resistance in Skeletal Muscle of Mice Fed High Fat Diet*. Poster session presented at The United Mitochondrial Disease Foundation (UMDF): Mitochondrial Medicine, Capitol Hill, Virginia.
- 2006 S Boudina, R Cooksey, D Jones, V Zaha, H Theobald, D McClain. *Divergent Mitochondrial Adaptations to High-fat Feeding are Strain Dependent, Occur Prior to the Onset of Skeletal Muscle Insulin Resistance and may Predict Weight Gain*. Poster session presented at Keystone Symposia: Diabetes Mellitus and the Control of Cellular Energy Metabolism, Vancouver, British Columbia.
- 2006 Sihem Boudina, Sandra Sena, Brian T O'Neill, Vlad G. Zaha, E. Dale Abel. *Mechanisms Responsible for Mitochondrial Uncoupling in Obesity and Diabetes*. Poster session presented at 4th Annual Scientific Sessions of Society for Heart and Vascular Metabolism, Semiahmoo, WA.

- 2005 Sihem Boudina, Sandra Sena, Brian T O'Neill, Vlad Zaha, Pradip Mazumder, Jordan Wright, Heather Theobald, Isaac Rasmussen, E Dale Abel. *Insulin Signaling Regulates Mitochondrial Function and Oxidative Phosphorylation Protein Content in the Murine Heart*. Poster session presented at Bioscience: From Genes to Systems, Glasgow, UK.
- 2004 **Boudina S**, Sena S, O'Neill BT, Abel ED. *Lack of Insulin Signaling in Cardiomyocytes Leads to Progressive ROS-mediated Defects in Mitochondrial Function*. Poster session presented at International Symposium on the Science of Diabetes Complications: Implication for Novel Therapy, Toronto, Canada.
- 2004 **Boudina S**, Cooksey RC, McClain DA, Abel ED. *Mitochondrial Dysfunction Precedes Generalized Insulin resistance in Response to High-Fat Feeding*. Poster session presented at IXth International Symposium on Insulin Receptors and Insulin Action, Nice, France.
- 2004 **Boudina S**, Sena S, Wright J, O'Neill BT, Mazumder PK, Abel ED. *Postnatal Deletion of Myocardial Insulin Receptor Augments Myocardial Fatty Acid Utilization and Enhances Mitochondrial Biogenesis*. Poster session presented at IXth International Symposium on Insulin Receptors and Insulin Action, Nice, France.
- 2002 Laclau MN, Dos Santos P, **Boudina S**, Dirolez P, Tariosse L, and Garlid KD. *Opening of Heart mitochondrial ATP-sensitive potassium channel is mandatory to respond to calcium-induced positive inotropic stress*. Poster session presented at VI International Meeting On New Perspectives in Ischemic Heart Disease: Heart Failure, Atherosclerosis and Hypertension in the Third Millennium, Bologna, Italy.
- 2002 **Boudina S**, Laclau MN, Pasquet S, Tariosse L, Bonoron-Adèle S, Saks VA, and Dos Santos P. *Beneficial effects of diazoxide opening of mitochondrial ATP-sensitive potassium channel on mitochondrial creatine kinase activity in chronic ischemic model in rats*. Poster session presented at VI International Meeting On New Perspectives in Ischemic Heart Disease: Heart Failure, Atherosclerosis and Hypertension in the Third Millennium, Bologna, Italy.
- 2001 **Boudina S**, Laclau MN, Thambo JB, Tariosse L, Gouverneur G, Bonoron-Adèle S, and Dos Santos P. *Preservation of cardiac and mitochondrial function by Diazoxide in an in vivo model of chronic myocardial ischemia in rats*. Poster session presented at Congrès annuel du Groupe de Réflexion sur la Recherche Cardiovasculaire, et de la Société Française d'Athérosclérose, Montpellier, France.
- 2001 **Boudina S**, Laclau MN, Thambo JB, Tariosse L, Gouverneur G, Bonoron-Adèle S, and Dos Santos P. *Preservation of cardiac and mitochondrial function by Diazoxide in an in vivo model of chronic myocardial ischemia in rats*. Poster session presented at Congrès annuel du Groupe de Réflexion sur la Recherche Cardiovasculaire, et de la Société Française d'Athérosclérose, Montpellier, France.
- 2001 Dos Santos P, Laclau M, Dirolez P, Thombo JB, **Boudina S**, Tariosse L, Bonoron-Adèle S, and Garlid KD. *Opening of heart mitochondrial ATP-sensitive potassium channel is mandatory to respond to calcium-induced positive inotropic stress*. Poster session presented at Congrès annuel du Groupe de Réflexion sur la Recherche Cardiovasculaire, et de la Société Française d'Athérosclérose, Montpellier, France.

- 2000 Laclau MN, **Boudina S**, Thambo JB, Tariosse L, Gouverneur G, Bonoron- Adèle S, and Dos Santos P.. *Mitochondrial KATP opener mimics reconditioning in the protection against early ischemic damages*. Poster session presented at 17e Congrès du Groupe de Réflexion sur la Recherche Cardiovasculaire (GRRC), Saint-Malo, France.
- 2000 **Boudina S**, Laclau MN, Thambo JB, Tariosse L, Gouverneur G, Bonoron-Adèle S, and Dos Santos P. *Alteration of contractile and mitochondrial function after chronic ischemia in rat hearts*. Poster session presented at 17e Congrès du Groupe de Réflexion sur la Recherche Cardiovasculaire (GRRC), Saint-Malo, France.
- 2000 Laclau MN, **Boudina S**, Thambo JB, Tariosse L, Gouverneur G, Bonoron-Adèle S, and Dos Santos P. *Mitochondrial KATP opener mimics reconditioning in the protection against early ischemic damages*. Poster session presented at V International Meeting on New Perspectives in Ischemic Heart Disease: Heart Failure, Atherosclerosis and Hypertension in Beginning of the New Millennium, Bologna, Italy.
- 2000 **Boudina S**, Laclau MN, Thambo JB, Tariosse L, Gouverneur G, Bonoron-Adèle S, and Dos Santos P. *Alteration of contractile and mitochondrial function after chronic ischemia in rat hearts*. Poster session presented at V International Meeting on New Perspectives in Ischemic Heart Disease: Heart Failure, Atherosclerosis and Hypertension in Beginning of the New Millennium, Bologna, Italy.