

Curriculum Vitae

Last Updated: 06/04/2023

PERSONAL DATA

Name: Jared P. Rutter
Citizenship: United States

EDUCATION

<u>Years</u>	<u>Degree</u>	<u>Institution (Area of Study)</u>
1991 - 1996	B.S.	Brigham Young University (Molecular Biology; emphasis in Chemistry) Provo, UT
1996 - 2001	Ph.D.	University of Texas Southwestern Medical Center, Steven L. McKnight, advisor (Cell and Molecular Biology) Dallas, TX
2001 - 2003	Postdoctoral Fellow	University of Texas Southwestern Medical Center Dallas, TX

ACADEMIC HISTORY

Biochemistry, 07/01/2003 - Present

07/01/2003	Hire, Tenure Track - Scientist Scholar, Assistant Professor
07/01/2009	Promotion, Associate Professor
07/01/2009	Tenure
07/01/2013	Promotion, Professor
07/01/2020	Promotion, Distinguished Professor

PROFESSIONAL EXPERIENCE

Full-Time Positions

1994 - 1996	Undergraduate Research Assistant, Brigham Young University, Provo, UT
1996 - 2001	Graduate Research Assistant, University of Texas Southwestern Medical Center, Dallas, TX
2001 - 2003	Sara and Frank McKnight Independent Fellow of Biochemistry, University of Texas Southwestern Medical Center, Dallas, TX
2003 - 2009	Assistant Professor, University of Utah School of Medicine, Department of Biochemistry, Salt Lake City, UT
2009 - 2013	Associate Professor, University of Utah School of Medicine, Department of Biochemistry, Salt Lake City, UT
2013 - 2020	Professor, University of Utah School of Medicine, Department of Biochemistry, Salt Lake City, UT
2013 - Present	Co-Director, Diabetes and Metabolism Research Center, University of Utah, Salt Lake City, UT
2013 - Present	Co-Leader, Nuclear Control of Cell Growth and Differentiation Program, Huntsman Cancer Institute, University of Utah, Salt Lake City, UT
2014 - Present	Dee Glen and Ida Smith Endowed Chair for Cancer Research, University of Utah, Salt Lake City, UT
2015 - Present	Investigator, Howard Hughes Medical Institute, Salt Lake City, UT

2020 – Present Distinguished Professor, University of Utah School of Medicine, Department of Biochemistry, Salt Lake City, UT
 2022 – Present Director of Research Activities, Department of Biochemistry, University of Utah

Editorial Experience

2012 – Present Editorial Board for *Cancer and Metabolism*
 2013 – Present Founding Editorial Board for Microbial Cell
 2016 – Present Editorial Board for Cell Reports
 2017 – 2022 Editorial Board for Molecular and Cellular Biology
 2017 – Present Advisory Editorial Board, *Life Science Alliance*
 2019 – Present Specialty Chief Editor, Frontiers in Endocrinology-Diabetes: Molecular Mechanisms
 2022 – Present Editorial Board, *Cell Metabolism*
 2023 Guest Editor, “Metabolic and nutritional control of development” Special issue, *Development*

Reviewer Experience

Reviewer for ACS Chemical Biology
 Reviewer for Autophagy
 Reviewer for Biochemistry
 Reviewer for Biochimica Biophysica Acta-Molecular Cell Research
 Reviewer for Cancer Cell
 Reviewer for Cell
 Reviewer for Cell Chemical Biology
 Reviewer for Cell Metabolism
 Reviewer for Cell Reports
 Reviewer for Cell Stem Cell
 Reviewer for Clinical Genetics
 Reviewer for Developmental Cell
 Reviewer for Diabetes
 Reviewer for eLIFE
 Reviewer for EMBO Journal
 Reviewer for EMBO Reports
 Reviewer for Endocrinology
 Reviewer for Federation of American Societies for Experimental Biology (FASEB) Journal
 Reviewer for Genes and Development
 Reviewer for International Union of Biochemistry and Molecular Biology (IUBMB) Life
 Reviewer for Journal of Biological Chemistry
 Reviewer for Journal of Cell Biology
 Reviewer for Journal of Cellular Physiology
 Reviewer for Journal of Clinical Investigation
 Reviewer for Life Science Alliance
 Reviewer for Journal of Lipid Research
 Reviewer for Journal of Molecular Biology
 Reviewer for Molecular and Cellular Biology
 Reviewer for Molecular and Cellular Endocrinology
 Reviewer for Molecular and Cellular Proteomics
 Reviewer for Molecular Biology of the Cell
 Reviewer for Molecular Cell
 Reviewer for Molecular Endocrinology

Reviewer for Molecular Neurobiology
 Reviewer for Molecular Systems Biology
 Reviewer for Nature
 Reviewer for Nature Biotechnology
 Reviewer for Nature Chemical Biology
 Reviewer for Nature Communications
 Reviewer for Nature Genetics
 Reviewer for Nature Metabolism
 Reviewer for Nature Reviews Cancer
 Reviewer for Obesity
 Reviewer for Proteins
 Reviewer for Proteomics
 Reviewer for Public Library of Science (PloS) Biology
 Reviewer for Public Library of Science (PloS) Genetics
 Reviewer for Public Library of Science (PloS) One
 Reviewer for Science
 Reviewer for Science of Signaling
 Reviewer for The Proceedings of the National Academy of Sciences (PNAS)
 Reviewer for Trends in Biochemical Sciences
 Reviewer for Trends in Cell Biology

SCHOLASTIC HONORS

1991	Presidential Scholar Finalist
1992 – 1996	National Merit Scholar; Brigham Young University
1992 – 1996	Trustees Scholar; Brigham Young University
1996	Pre-Doctoral Training Scholarship; UT Southwestern
1997	NIH Pre-Doctoral Training Fellowship; UT Southwestern, Molecular Biophysics Graduate Program
2001	Sigma Xi Award; UT Southwestern
2002	Amersham Biosciences & Science Prize for Young Scientists; Grand Prize
2002	Nominata Award for most outstanding graduate student; UT Southwestern
2004	Searle Scholars Award
2005	American Diabetes Association- Career Development Award
2006	W.M. Keck Distinguished Young Scholar- Research Achievement Award
2008	Jaime Kim Memorial Lecture, Division of Endocrinology, University of Chicago
2011	American Diabetes Association Mentor-based postdoctoral fellowship
2015	Finalist, Blavatnik National Award for Young Scientists
2016	ASBMB Plenary Lecture
2017	Herbert E. Carter Lecturer in Nutritional Biochemistry, University of Illinois
2018	Arthur Haas Endowed Lecturer, LSU Health Science Center
2018	Danny Thomas Lecture, St. Jude Children's Research Hospital
2020	Kroc Endowed Lecturer in Diabetes, University of Chicago
2023	Walter J. Burdette Distinguished Lecture, University of Texas

ADMINISTRATIVE EXPERIENCE

Administrative Duties

2005 – 2008	Chair, Program in Biological Chemistry, Biological Chemistry Admissions Committee
2006 – 2021	Co-founder, Scientific Advisory Board and Consultant, BioEnergenix LLC

2011 Consultant, SuperGen
 2011 Selection Committee, GE and Science Prize for Young Scientists
 2011 – 2016 Course Director, Metabolism and Reproduction Course, University of Utah School of Medicine
 2012 – Present Founder, Scientific Advisory Board, Vettore, LLC
 2014 – 2017 Full Voting Member, ASBMB Governing Council
 2015 – Present Scientific Advisory Board and Consultant, Centaurus Therapeutics
 2017 – 2022 Director of Research, Driving out Diabetes Initiative, University of Utah
 2018 – Present Member, Science and Industry Advisory Board, RiverVest Ventures
 2018 – Present Member, Scientific Advisory Board, Monolog Therapeutics
 2019 – Present Member, Board of Directors, Deuel Lipid Conference
 2021 – Present Founder, Member-Scientific Advisory Board, Atavistik Bio
 2021 – Present Member, Scientific Advisory Board, PAQ Therapeutics
 2022 – Present Member, Scientific Advisory Board, Empress Therapeutics
 2023 – Present Member, Scientific Advisory Board, Vedra Therapeutics
 2023 – Present Janelia Scholar, Janelia Research Campus, Howard Hughes Medical Institute

Professional Organization & Scientific Activities

2018 Mentor, American Society for Biochemistry and Molecular Biology, ASBMB
 Minority Affairs Committee, Grant Writing Workshop, Washington DC

Grant Review Committee/Study Section

2007 NIH Working Group - Circadian-coupled Function
 2007 NIH Study Section- Cellular Aspects of Diabetes and Obesity (CADO) study section (ad hoc)
 2009 NIH Challenge Grant Review Committee (ZRG1 CB-N (58) R)
 2009 NIH Special Emphasis Panel Grant Review (ZRG1 EMNR-H (02) M)
 2009 NIH R15 AREA Grant Review study section (ZRG1 EMNR-H (52) R)
 2009 – 2010 NIH Study Section- Integrative Physiology of Obesity and Diabetes (IPOD) (ad hoc)
 2009 – 2011 American Diabetes Association-Research Grant Review Committee
 2010 NIH RC4 Grant Review Panel
 2010 NSF Grant Review
 2010 VA Clinical Trials Review
 2010 Cancer Research UK, VA Clinical Trials, RC4 Grant Review Committee
 2011 NIH Study Section – Cellular Aspects of Diabetes and Obesity (CADO) study section (ad hoc)
 2011 - 2015 Permanent Member, NIH Study Section - Integrated Physiology of Obesity and Diabetes (IPOD)
 2012 Grant Reviewer, French National Research Agency
 2012 Grant Reviewer, Israel Science Foundation
 2012 - 2013 Grant Reviewer, Qatar National Research Foundation
 2012 - 2016 Review Committee, NIH Director's Pioneer Award Program
 2013 Grant Reviewer, NCI Small Grants for Cancer Research Special Emphasis Panel
 2013 Reviewer, Army Research Office
 2014 Reviewer, Danish Council for Independent Research
 2014 Reviewer, Diabetes Research Center Pilot & Feasibility Grants, Washington University
 2014 Review Committee, NIH Study Section - Innovative Approaches for the Identification of Mitochondria-Cell Signaling Networks in Response To Environmental Stress (R21/R33s)
 2015 Grant Reviewer, Washington University Diabetes Research Center P&F Program

2015 - 2016	Reviewer, HHMI Faculty Scholar Competition
2016	Ad hoc reviewer, European Research Council
2016	Grant Reviewer, National Cancer Institute Provocative Question Program
2016	Ad hoc reviewer, Wellcome Trust Center Grants
2016	Grant Reviewer, NIGMS MIRA (R35) Grants
2016	Grant Reviewer, Diabetes UK
2017	Grant Reviewer, Israel Science Foundation
2017 – 2018	Grant Reviewer, NIH Study Section - Special RMI Review Panel
2017 – 2018	Ad hoc reviewer, NIH Study SEction - Membrane Biology and Protein Processing (MBPP)
2018	Grant Reviewer, NIH Study Section - Special P01 Review Panel
2018 – 2019	Grant Reviewer, NIH Study Section - Special Panel "Inter-Organelle Communication in Cancer"
2018	Reviewer, HHMI Investigator Competition
2019	Grant Reviewer, CDMRP Mitochondrial Disease Program
2019	Grant Reviewer, Pioneer Award Program, National Institutes of Health
2019	Member, NIGMS MIRA Study Section
2020	Grant Reviewer, Dutch Research Program
2020	Grant Reviewer, European Research Council
2020	Grant Reviewer, Wellcome Trust, United Kingdom
2020 - Present	Damon Runyon Fellowship Award Committee
2021	Review Panel, Early Stage Investigator MIRA program, NIGMS, National Institutes of Health
2021, 2023	Reviewer, Investigator Competition, Howard Hughes Medical Institute
2023	Selection Committee, Freeman Hrabowski Scholars, Howard Hughes Medical Institute

Symposium/Meeting Chair/Coordinator

2007	Metabolism Theme Chair, ASBMB Meeting, Washington, DC
2012	Session Chair, "Organismal Metabolism", ASBMB Meeting, San Diego, CA
2012	Session Chair, "Metabolic Pathways Regulating Cancer", AACR National Meeting, Chicago, IL
2013	Session Chair, "Novel Metabolic Mediators of Energy Homeostasis", American Diabetes Association Scientific Sessions, Chicago, IL
2013 - 2016	Planning Committee, American Diabetes Association Annual Scientific Sessions
2013 - 2016	Session Chair for Several Sessions, American Diabetes Association Annual Meeting
2014 - 2015	Planning Committee, American Association for Cancer Research Annual Meeting
2016	Co-Chair, ASCB Annual Meeting, Organelles and Spatial Organization of the Cell Minisymposium
2017	Organizer, Keystone Symposium, Mitochondrial Communication
2017 - 2023	Organizer, Cold Spring Harbor Laboratory Symposium, Mechanisms of Metabolic Signaling
2017 - 2023	Co-Chair, Utah Cardiac Recovery Symposium, Session on Metabolism
2022	Organizer, Cell Symposium on Multifaceted Mitochondria, Sevilla, Spain
2022	Organizer, Keystone Bioenergetics in Health and Diseases Symposium, Keystone, CO

PROFESSIONAL COMMUNITY ACTIVITIES

2005 - 2009	External Advisor, University of Texas Southwestern Medical Center, NCI Program Project Grant
-------------	--

2015	Member, Wake Forest School of Medicine, External Advisory Board
2018	External Site Reviewer, The Francis Crick Institute, London, UK
2018 - Present	Member, Nebraska Center for Molecular Target Discovery and Development, External Advisory Board, University of Nebraska Medical Center

UNIVERSITY COMMUNITY ACTIVITIES

University Level

2010 - 2011	Member, University of Utah, Shared Resource Review Committee
2012	Speaker, Development Office, University of Utah National Advisory Council
2013 - Present	Member, Genetic Science Learning Center, Online Metabolism Learning Resource Advisory Committee
2019 – Present	Member, Steering Committee, Chemical Biology Training Program T32

Health Sciences Level

2012	Speaker, Health Sciences Advocates, University of Utah
2014 – Present	Member, Metabolic Phenotyping Core, Facility Oversight Committee
2016 – Present	Member, Drug Discovery Core, Facility Oversight Committee
2016 – Present	Member, Metabolomics Core Facility, Facility Oversight Committee

College Level

2018 - 2019	Chair, College of Pharmacy, Search Committee for Chair of Pharmaceuticals and Pharmaceutical Chemistry
2018	Chair, School of Medicine, Search Committee for Endocrinology Division Chief
2019	Co-Chair, Interdepartmental Search Committee for Metabolism

Programs, Centers & Institutes

2004 - 2009	Member, Biological Chemistry Graduate Program, Biological Chemistry Admissions Committee
2010 - 2011	Member, Molecular Biology Program, Molecular Biology Admissions Committee
2012 – 2018	Member, Huntsman Cancer Institute, Drug Screening Resource Oversight Committee
2022	Graduate Program Review Committee, Department of Chemistry, University of Utah

CURRENT MEMBERSHIPS IN PROFESSIONAL SOCIETIES

American Diabetes Association
American Society for Biochemistry and Molecular Biology

FUNDING

Active Grants

Howard Hughes Medical Institute
Rutter (PI)
9/1/2015-11/30/2028 Investigator Program. This award supports the research program of the PI as a whole.

R35 GM13185
Rutter (PI)
1/1/2019–12/31/2023 Mitochondrial Biochemistry: From Mechanisms to Disease

R01 CA228346
Rutter/Thummel (MPI)
7/1/2018-6/30/2023
Metabolic regulation of intestinal stem cell homeostasis

U54 NS079201
MacRae/Peterson (MPI); Role: Project 3 Leader
7/1/2019-6/30/2024
Discovery and Development of Novel Classes of Cyanide Countermeasure

Nora Eccles Treadwell Foundation
Rutter (PI)
7/1/2013-6/30/2023
Mitochondrial Pyruvate Metabolism: Structure and Role in Heart Failure

Calico Laboratories
Rutter (PI)
9/1/2016-8/31/2024
Systematic Discovery of Metabolite-Protein Interactions

Pending Grants

Past Grants

07/01/04 - 06/30/07	Regulation of the Nutrient-Responsive PAS Kinase. Principal Investigator: Jared Rutter Searle Scholars Program Role: <u>Principal Investigator</u>
07/01/04 - 06/30/10	The Role of PAS Kinase in Glucose-Responsive Transcription in Beta-Cells Career Development Award-7-05-CD-27 Principal Investigator: Jared Rutter American Diabetes Association Role: <u>Principal Investigator</u>
07/01/05 - 07/01/09	PAS Kinases MUI, Minority Supplement; Parent: Role of PAS Kinase in Glucose-Responsive Transcription in Beta-Cells Principal Investigator: Jared Rutter American Diabetes Association Role: <u>Principal Investigator</u>
06/01/06 - 05/31/07	NSRA Fellowship for Julianne Grose: Identification of PAS Kinase Activators F32 DK076413 Principal Investigator: Jared Rutter National Institute of Diabetes and Digestive and Kidney Diseases Role: <u>Principal Investigator</u>
07/01/06 - 06/30/07	Chemical and Genetic Approaches to PAS Kinase activation Keck Distinguished Young Scholars in Medical Research Achievement Award Principal Investigator: Jared Rutter W.M. Keck Foundation Role: <u>Principal Investigator</u>
08/01/06 - 02/29/08	Screen For Novel Allosteric Interactions Principal Investigator: Jared Rutter

University Of Utah Foundation
 Role: Principal Investigator
 03/09/09 - 01/31/13 Minority Supplement - A Conserved Module Required for Mitochondrial Function and Viability Under Stress
 R01 GM087346
Support for student Joshua Jaimez until he terminated his employment Aug 2011
 Principal Investigator: Jared Rutter
 National Institute of General Medical Sciences
 Role: Principal Investigator
 03/09/09 - 01/31/14 A Conserved Module Required for Mitochondrial Function and Viability Under Stress
 R01 GM087346
 Principal Investigator: Jared Rutter
 NIH National Institute of General Medical Sciences (NIGMS)
 Role: Principal Investigator
 07/01/09 - 06/30/11 Fellowship for Eric Taylor: LMS1 is a Novel Protein Critical for Mitochondrial Maintenance
 POST 2110034
 Principal Investigator: Eric Taylor
 Direct Costs: \$94,000 Total Costs: \$94,000
 American Heart Association Western States Affiliate
 Role: Mentor
 08/10/09 - 07/31/11 ARRA - A Conserved Module Required for Mitochondrial Function and Viability Under Stress
 R01 GM087346-S2
 Principal Investigator: Jared Rutter
 National Institute of General Medical Sciences
 Role: Principal Investigator
 12/16/09 - 06/30/12 Nuclear Control Program
 Principal Investigator: Jared Rutter
 Huntsman Cancer Institute
 Role: Principal Investigator
 07/01/10 - 06/30/14 The Role of PAS Kinase in Hepatic Lipid Metabolism
 R01 DK071962
 Principal Investigator: Jared Rutter
 National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)
 Role: Principal Investigator
 09/01/10 - 05/31/12 Fellowship for Eric Taylor: LMS1 is a Novel Protein Critical for Mitochondrial Maintenance
 K99 AR059190
 Principal Investigator: Eric Taylor
 National Institute of Arthritis and Musculoskeletal and Skin Diseases
 Role: Faculty Advisor
 07/01/11 - 06/30/13 Fellowship for Chintan Kikani: To Characterize the Role of Per-Arnt-Sim Domain Regulated Kinase (PASK) function in Hepatic Lipogenesis
 POST 7310059
 American Heart Association Western States Affiliate
 Role: Faculty Advisor
 07/01/11 - 06/30/15 Fellowship for Sarah Fogarty: The role of PAS Kinase in Insulin-Induced Lipogenesis

7-11-MN-44
American Diabetes Association
Role: Faculty Advisor

09/30/11 - 09/29/12 Functional Genomics Of the Mitochondrial Proteome
R24 DK092784 (Rutter share)
Principal Investigator(s): Evan Dale Abel; Carl S. Thummel; Dennis R. Winge;
Jared Rutter
NIH National Institute of Diabetes and Digestive and Kidney Disease (NIDDK)
Role: Co-Investigator

02/01/12 - 01/31/17 Functions of the Mitochondrial Proteome: An Integrated Multi-Species Approach
RO1 GM094232
Principal Investigator(s): Jared Rutter; Carl S. Thummel
NIH National Institute of General Medical Sciences (NIGMS)
Role: Principal Investigator

07/01/12 - 06/30/17 Mentor-Based Postdoctoral FellowshipThe Role Of PAS Kinase In Insulin-
Induced Lipogenesis
Principal Investigator: Jared Rutter
American Diabetes Association
Role: Principal Investigator

07/01/13 - 06/30/14 Mitochondrial Pyruvate Metabolism
Nora Eccles Treadwell Foundation
Role: Principal Investigator

07/01/13 - 06/30/15 Fellowship Amy Hawkins
Principal Investigator: Amy Hawkins
American Cancer Society
Role: Mentor

05/01/14 - 02/28/18 Succinate Dehydrogenase: Biogenesis and Role in Disease
Principal Investigator(s): Jared Rutter; Dennis R. Winge
National Institutes of Health
Role: Principal Investigator

07/01/14 - 06/30/16 Eric Fredrickson Postdoctoral Fellowship
Principal Investigator(s): Eric Fredrickson
American Heart Association
Role: Mentor

08/01/14 - 04/30/18 Establishing the role fo the atypical kinase ADCK3 in mitochondrial metabolism
Principal Investigator: David Pagliarini
University Of Wisconsin-Madison
Role: Co-Principal Investigator

02/01/16 - 01/31/18 Sara Nowinski Postdoctoral Fellowship: Mitochondrial Kinase Adck3
Principal Investigator: Sara Nowinski
United Mitochondrial Disease Foundation
Role: Mentor

07/01/15 - 03/31/19 An Interdisciplinary Approach to Stress-Induced Mitochondrial Quality Control
Principal Investigator(s): Christopher P. Hill; Jared P. Rutter
National Institutes of Health
Role: Principal Investigator

07/01/15 - 06/30/19 Mitochondrial Pyruvate Metabolism
Principal Investigator: Jared P. Rutter
Nora Eccles Treadwell Foundation
Role: Principal Investigator

07/01/15 - 06/30/19 Msp1/ATAD1: Mitochondrial and peroxisomal protein sorting
Principal Investigator: Jared P. Rutter
National Institutes of Health
Role: Principal Investigator

10/25/16 - 01/31/19 Systematic Discovery of Protein-Metabolite Interactions: Technology Development and Implementation
Principal Investigator: Jared P. Rutter
Calico Life Sciences LLC
Role: Principal Investigator

07/01/17 - 06/30/19 AHA Postdoctoral Fellowship - Olga Zurita
Principal Investigator: Jared P. Rutter
American Heart Association Western States Affiliate
Role: Principal Investigator

02/01/18 - 01/31/19 F30 Predoctoral Fellowship- Claire Bensard
Principal Investigator: Jared P. Rutter
Role: Mentor

07/01/18 - 06/30/20 ACS Postdoctoral Fellowship Sara Nowinski
Principal Investigator: Jared Rutter
American Cancer Society
Role: Mentor

09/01/18 - 08/31/22 K00 Transition Award (Postdoctoral) Alex Bott
Principal Investigator: Alex Bott
National Institutes of Health/ National Cancer Institute
Role: Mentor

07/01/19 – 06/31/22 Jane Coffin Childs Postdoctoral Fellowship: Jeff Morgan
Principal Investigator: Jeff Morgan
Jane Coffin Childs
Role: Mentor

Past Contracts

09/01/06 - 04/30/11 PAS Kinase And Diabetes Therapy
Principal Investigator: Jared P. Rutter
Bioenergenix, LLC
Role: Principal Investigator

05/01/11 - 06/30/13 PAS Kinase and Diabetes Therapy
Principal Investigator: Jared Rutter
Bioenergenix, LLC
Role: Principal Investigator

03/15/14 - 03/14/16 PAS Kinase and Diabetes Therapy
Principal Investigator: Jared P. Rutter; Wojciech I. Swiatek
Bioenergenix LLC
Role: Principal Investigator

09/16/14 - 09/15/15 Inhibitors Of Lactic Acid Transport
Principal Investigator: Jared P. Rutter
Vettore LLC
Role: Principal Investigator

2/1/19 – 1/31/21 The Metabolic Basis of Human Heart Failure and Recovery
Principal Investigators: Jared Rutter and Stavros Drakos
Merck Research Labs
Role: Multi-Principal Investigator

TEACHING RESPONSIBILITIES/ASSIGNMENTS

Course and Curriculum Development

2004 - Present Developed BIO C 7100 Course, Advanced Seminar - Metabolism

Courses Directed

2004 - Present BIO C 7100 Course, Advanced Seminar - Metabolism

2011 - 2016 Metabolism and Reproduction Course MSII

Course Lectures

2004 - Present Primary Instructor, BIO C 7100: Topics-Biochemistry, Advanced Seminar - Metabolism, University of Utah, Biochemistry

2004 - 2012 Instructor, BLCHM 6400: Genetic Engineering, University of Utah. 2 credit hours, ~20 students per year
Team taught with Dana Carroll 2004-2011, 10 lecture hours
Team taught with Dana Carroll and Adam Frost 2012 - Present, 7 lectures

2010 Instructor, MD ID: Second Year Medical Science, University of Utah, Deans Office - SOM. 4 lectures

2011 - Present Instructor, BLCHM 6100: Seminar Journal Club, University of Utah

2012 - Present Instructor, Medical School Teaching, Metabolism and Reproduction Rotations, University of Utah

2013 Instructor (1): MS2015 M+R - Unit Introductions, University of Utah

2013 Primary Instructor, MD ID 7350: Metabolism & Reproduction, 684 SCH, 76 students, University of Utah, Deans Office - SOM

2013 Instructor (1): MS2015 M+R - Quiz 1, University of Utah

2013 Instructor (1): MS2015 M+R - Endocrine Pancreas & Insulin resistance, University of Utah

2013 Instructor (1): MS2015 M+R - Intro to Lipid Metabolism, University of Utah

2013 Instructor (1): MS2015 M+R - Quiz 2, University of Utah

2013 Instructor (1): MS2015 M+R - Quiz 3, University of Utah

2013 Instructor (1): MS2015 M+R - M+R Review, University of Utah

2013 Instructor (1): MS2015 M+R - Final Exam, University of Utah

2013 Primary Instructor, BIO C 7040 (14): Lab Resrch Conferences, 5 SCH, 5 students, University of Utah, Biochemistry

2013 Primary Instructor, BIO C 7970 (14): Thesis Research-Ph D, 35 SCH, 7 students, University of Utah, Biochemistry

2014 Developer, BIOC: Metabolism and Reproduction - Unit Introduction, University of Utah, Biochemistry

2014 Primary Instructor, MD ID 7350 (1): Metabolism & Reprodctn, 774 SCH, 86 students, University of Utah, Office of the Dean/Medicine

2014 Primary Instructor, BIO C 7970 (12): Thesis Research-Ph D, 35 SCH, 7 students, University of Utah, Biochemistry

2014 Primary Instructor, BIO C 7040 (11): Lab Resrch Conferences, 5 SCH, 5 students, University of Utah, Biochemistry

2014 Instructor, MD ID (1): MS2016 M+R - Unit Introduction, University of Utah, Office of the Dean/Medicine

2014 Developer, BIOC: Metabolism and Reproduction - Case Based Learning #1, University of Utah, Biochemistry

2014 Instructor, MD ID (1): MS2016 M+R - Case Based Learning #1, University of Utah, Office of the Dean/Medicine

2014 Developer, BIOC: Metabolism and Reproduction - Clinical Reasoning / Board Prep Skills, University of Utah, Biochemistry

Commented [JR1]: Maybe Diana can pull updates from somewhere for 2019?

2014 Instructor, MD ID (1): MS2016 M+R - Clinical Reasoning / Board Prep Skills, University of Utah, Office of the Dean/Medicine

2014 Developer, BIOC: Metabolism and Reproduction - Clinical Exam Skills HSEB 4300, University of Utah, Biochemistry

2014 Instructor, MD ID (1): MS2016 M+R - Clinical Exam skills, University of Utah, Office of the Dean/Medicine

2014 Developer, BIOC: Metabolism and Reproduction - Case Based Learning #2, University of Utah, Biochemistry

2014 Instructor, MD ID (1): MS2016 M+R - Case Based Learning #2, University of Utah, Office of the Dean/Medicine

2014 Instructor, MD ID (1): MS2016 M+R - Clinical reasoning / Board Prep, University of Utah, Deans Office - SOM

2014 Developer, BIOC: Metabolism and Reproduction - MS2016 M+R Quiz 1, University of Utah, Biochemistry

2014 Instructor, MD ID (1): MS2016 M+R - Quiz #1, University of Utah, Office of the Dean/Medicine

2014 Instructor, MD ID (1): MS2016 M+R - Case Based Learning #4, University of Utah, Office of the Dean/Medicine

2014 Developer, BIOC: Metabolism and Reproduction - Clinical Reasoning - Board Prep, University of Utah, Biochemistry

2014 Instructor, MD ID (1): MS2016 M+R - Clinical Reasoning / Board Prep Skills, University of Utah, Office of the Dean/Medicine

2014 Developer, BIOC: Metabolism and Reproduction - Endocrine Pancreas & Insulin Resistance / Big Picture, University of Utah, Biochemistry

2014 Instructor, MD ID (1): MS2016 M+R - Endocrine Pancreas & Insulin resistance, University of Utah, Office of the Dean/Medicine

2014 Developer, BIOC: Metabolism and Reproduction - Case Based Learning #5, University of Utah, Biochemistry

2014 Instructor, MD ID (1): MS2016 M+R - Case Based Learning #5, University of Utah, Office of the Dean/Medicine

2014 Developer, BIOC: Metabolism and Reproduction - Intro to Lipid Metabolism, University of Utah, Biochemistry

2014 Developer, BIOC: Metabolism and Reproduction - Clinical Reasoning / Board Review, University of Utah, Biochemistry

2014 Instructor, MD ID (1): MS2016 M+R - Intro to Metabolism, University of Utah, Office of the Dean/Medicine

2014 Instructor, MD ID (1): MS2016 M+R - Clinical Reasoning / Board Prep Skills, University of Utah, Office of the Dean/Medicine

2014 Developer, BIOC: Metabolism and Reproduction - MS2016 M+R Quiz 2, University of Utah, Biochemistry

2014 Instructor, MD ID (1): MS2016 M+R - Quiz #2, University of Utah, Office of the Dean/Medicine

2014 Developer, BIOC: Metabolism and Reproduction - Case Based Learning #7, University of Utah, Biochemistry

2014 Instructor, MD ID (1): MS2016 M+R - Case Based Learning #6, University of Utah, Office of the Dean/Medicine

2014 Developer, BIOC: Metabolism and Reproduction - Clinical Reasoning / Board Prep, University of Utah, Biochemistry

2014 Instructor, MD ID (1): MS2016 M+R - Clinical Reasoning/ Board Prep, University of Utah, Office of the Dean/Medicine

2014 Instructor, MD ID (1): MS2016 M+R - CBL F, University of Utah, Office of the Dean/Medicine

2014 Developer, BIOC: Metabolism and Reproduction - Quiz 3, University of Utah, Biochemistry

2014 Instructor, MD ID (1): MS2016 M+R - Quiz #3, University of Utah, Office of the Dean/Medicine

2014 Developer, BIOC: Metabolism and Reproduction - Case Based Learning #8, University of Utah, Biochemistry

2014 Instructor, MD ID (1): MS2016 M+R - CBL G, University of Utah, Office of the Dean/Medicine

2014 Developer, BIOC: Metabolism and Reproduction - Case Based Learning #9, University of Utah, Biochemistry

2014 Instructor, MD ID (1): MS2016 M+R - CBL 9, University of Utah, Office of the Dean/Medicine

2014 Developer, BIOC: Metabolism and Reproduction - Clinical Reasoning and Board Prep, University of Utah, Biochemistry

2014 Instructor, MD ID (1): MS2016 M+R - Clinical Reasoning and Board Prep, University of Utah, Office of the Dean/Medicine

2014 Developer, BIOC: Metabolism and Reproduction - Clinical Reasoning / Board Prep, University of Utah, Biochemistry

2014 Developer, BIOC: Metabolism and Reproduction - Review, University of Utah, Biochemistry

2014 Instructor, MD ID (1): MS2016 M+R - Review, University of Utah, Office of the Dean/Medicine

2014 Instructor, MD ID (1): MS2016 M+R - Final MOSPE/OSCE, University of Utah, Office of the Dean/Medicine

2014 Developer, BIOC: Metabolism and Reproduction - Final Exam, University of Utah, Biochemistry

2014 Instructor, MD ID (1): MS2016 M+R - M+R Final Exam, University of Utah, Office of the Dean/Medicine

2014 Primary Instructor, BIO C 7970 (13): Thesis Research-Ph D, 22 SCH, 8 students, University of Utah, Biochemistry

2014 Developer, BIOC: Metabolism and Reproduction - Unit Introduction, University of Utah, Biochemistry

2014 Developer, BIOC: Metabolism and Reproduction - Clinical Reasoning/Board Prep, University of Utah, Biochemistry

2014 Developer, BIOC: Metabolism and Reproduction - Endocrine Pancreas & Insulin Resistance/Big picture, University of Utah, Biochemistry

2014 Primary Instructor, BIO C 7100 (1): Topics-Biochemistry, 5 SCH, 5 students, University of Utah, Biochemistry

2014 Primary Instructor, BIO C 7040 (14): Lab Resrch Conferences, 6 SCH, 6 students, University of Utah, Biochemistry

2014 Primary Instructor, MD ID 7350 (1): Metabolism & Reprodctn, 909 SCH, 101 students, University of Utah, Office of the Dean/Medicine

2014 Primary Instructor, BIO C 7970 (14): Thesis Research-Ph D, 52 SCH, 8 students, University of Utah, Biochemistry

2014 Developer, BIOC: Metabolism and Reproduction - Intro to Lipid Metabolism, University of Utah, Biochemistry

2014 Developer, BIOC: Metabolism and Reproduction - Review, University of Utah, Biochemistry

2014 Developer, BIOC: Metabolism and Reproduction - M + R Final Exam, University of Utah, Biochemistry

2015 Primary Instructor, BIO C 7970 (12): Thesis Research-Ph D, 53 SCH, 8 students, University of Utah, Biochemistry

2015 Primary Instructor, BIO C 7040 (11): Lab Resrch Conferences, 6 SCH, 6 students, University of Utah, Biochemistry

2015 Primary Instructor, BIO C 7100 (1): Topics-Biochemistry, 3 SCH, 3 students, University of Utah, Biochemistry

2015 Primary Instructor, BIO C 7970 (13): Thesis Research-Ph D, 18 SCH, 7 students, University of Utah, Biochemistry

2015 Developer, BIOC: Metabolism and Reproduction - Clinical Reasoning / Board Prep, University of Utah, Biochemistry

2015 Facilitator, BIOC: Metabolism and Reproduction - Reconnecting to Metabolism, University of Utah, Biochemistry

2015 Developer, BIOC: Metabolism and Reproduction - Endocrine Pancreas, University of Utah, Biochemistry

2015 Primary Instructor, BIO C 7970 (14): Thesis Research-Ph D, 62 SCH, 8 students, University of Utah, Biochemistry

2015 Primary Instructor, BIO C 7040 (14): Lab Resrch Conferences, 7 SCH, 7 students, University of Utah, Biochemistry

2015 Primary Instructor, MD ID 7350 (1): Metabolism & Reproductn, 918 SCH, 102 students, University of Utah, Office of the Dean/Medicine

2015 Developer, BIOC: Metabolism and Reproduction - Clinical Reasoning / Board Prep, University of Utah, Biochemistry

2015 Developer, BIOC: Metabolism and Reproduction - Mechanisms of Hormone Action, University of Utah, Biochemistry

2015 Developer, BIOC: Metabolism and Reproduction - Intro to Lipid Metabolism , University of Utah, Biochemistry

2015 Developer, BIOC: Metabolism and Reproduction - Clinical Reasoning / Board Prep, University of Utah, Biochemistry

2015 Developer, BIOC: Metabolism and Reproduction - QUIZ 3 , University of Utah, Biochemistry

2015 Developer, BIOC: Metabolism and Reproduction - Comprehensive Review , University of Utah, Biochemistry

2016 Primary Instructor, BIO C 7040 (11): Lab Resrch Conferences, 7 SCH, 7 students, University of Utah, Biochemistry

2016 Primary Instructor, BIO C 7100 (1): Topics-Biochemistry, 1 SCH, 1 student, University of Utah, Biochemistry

2016 Primary Instructor, BIO C 7970 (12): Thesis Research-Ph D, 53 SCH, 8 students, University of Utah, Biochemistry

2016 Primary Instructor, BIO C 7970 (13): Thesis Research-Ph D, 18 SCH, 6 students, University of Utah, Biochemistry

2016 Primary Instructor, MD ID 7350 (1): Metabolism & Reproductn, 1062 SCH, 118 students, University of Utah, Office of the Dean/Medicine

2016 Primary Instructor, BIO C 7100 (1): Topics-Biochemistry, 4 SCH, 4 students, University of Utah, Biochemistry

2016 Primary Instructor, BIO C 7040 (14): Lab Resrch Conferences, 2 SCH, 2 students, University of Utah, Biochemistry

2016 Primary Instructor, BIO C 7970 (14): Thesis Research-Ph D, 34 SCH, 7 students, University of Utah, Biochemistry

2016	Developer, BIOC: Metabolism and Reproduction - Endocrine Pancreas, University of Utah, Biochemistry
2016	Developer, BIOC: Metabolism and Reproduction - Lipid Metabolism, University of Utah, Biochemistry
2017	Primary Instructor, BIO C 7100 (1): Topics-Biochemistry, 2 SCH, 2 students, University of Utah, Biochemistry
2017	Primary Instructor, BIO C 7040 (11): Lab Resrch Conferences, 3 SCH, 3 students, University of Utah, Biochemistry
2017	Primary Instructor, BIO C 7970 (12): Thesis Research-Ph D, 27 SCH, 5 students, University of Utah, Biochemistry
2017	Primary Instructor, BIO C 7970 (13): Thesis Research-Ph D, 22 SCH, 8 students, University of Utah, Biochemistry
2017	Primary Instructor, BIO C 7040 (14): Lab Resrch Conferences, 6 SCH, 6 students, University of Utah, Biochemistry
2017	Primary Instructor, BIO C 7970 (14): Thesis Research-Ph D, 48 SCH, 7 students, University of Utah, Biochemistry
2017	Primary Instructor, MD ID 7350 (1): Metabolism & Reprodctn, 1152 SCH, 128 students, University of Utah, Office of the Dean/Medicine
2018	Primary Instructor, BIO C 7100 (1): Topics-Biochemistry, 1 SCH, 1 student, University of Utah, Biochemistry
2018	Primary Instructor, BIO C 7970 (12): Thesis Research-Ph D, 39 SCH, 6 students, University of Utah, Biochemistry
2018	Primary Instructor, BIO C 7040 (11): Lab Resrch Conferences, 5 SCH, 5 students, University of Utah, Biochemistry
2018	Primary Instructor, BIO C 7970 (13): Thesis Research-Ph D, 15 SCH, 5 students, University of Utah, Biochemistry
2018	Primary Instructor, BIO C 7040 (14): Lab Resrch Conferences, 4 SCH, 4 students, University of Utah, Biochemistry
2018	Primary Instructor, BIO C 7100 (1): Topics-Biochemistry, 1 SCH, 1 student, University of Utah, Biochemistry
2018	Primary Instructor, BIO C 7970 (14): Thesis Research-Ph D, 41 SCH, 6 students, University of Utah, Biochemistry

Small Group Teaching

2003 - 2008	Yeast Club
2003 - Present	Metabolism Interest Group (Coordinator)
2004 - 2009	BIO C 6090 Problem Based Learning Facilitator; 3 2-hour Problem Sessions per year.

Trainee Supervision

Faculty

2009 - Present	Supervisor, Ania Hubbard, University of Utah
2011 - 2012	Supervisor, Eric Taylor, University of Utah
	<i>Trainee's Current Career Activities:</i> Assistant Professor of Biochemistry, University of Iowa
2011 - Present	Supervisor, Wojciech Swiatek, Instructor of Biochemistry, University of Utah
2016 – 2019	Supervisor, Stephen McKellar, Associate Professor of Surgery, University of Utah
2018 – 2019	Supervisor, Wojciech Swiatek, Research Assistant Professor of Biochemistry, University of Utah
2021 - Present	Supervisor, Stephen Baker, Assistant Professor of Pathology, University of Utah

Fellow

2004 - 2008	Supervisor, Julianne Grose, University of Utah. Ph.D. University of Utah, 2003 Research Project: Regulation of PAS Kinase <i>Trainee's Current Career Activities:</i> Associate Professor of Microbiology and Molecular Biology, Brigham Young University
2005 - 2011	Supervisor, Wojciech Swiatek, University of Utah. Ph.D. University of Gdansk, Poland, 2000 Research Project: PAS Kinase and diabetes therapy <i>Trainee's Current Career Activities:</i> Instructor of Biochemistry, University of Utah
2007 - 2011	Supervisor, Eric Taylor, University of Utah. Ph.D. Brigham Young University, 2005 Research Project: PAS Kinase Regulation by mTOR <i>Trainee's Current Career Activities:</i> Associate Professor of Biochemistry, University of Iowa
2008 - 2019	Supervisor, Chintan Kikani, University of Utah. Ph.D. University of Texas, San Antonio, 2007 Research Project: PAS Kinase signaling in mammals <i>Trainee's Current Career Activities:</i> Assistant Professor of Biology, University of Kentucky
2010 - 2015	Supervisor, Sarah Fogarty, University of Utah. Ph.D. University of Dundee, Scotland, 2008 Research Project: Novel PAS Kinase substrates <i>Trainee's Current Career Activities:</i> Lab Manager, Rutter Lab, University of Utah
2011 - 2015	Supervisor, Amy Hawkins, University of Utah. Ph.D. Virginia Commonwealth University, 2009 Research Project: PAS Kinase and cancer <i>Trainee's Current Career Activities:</i> Assistant Professor in the Teaching Track, Department of Biochemistry, University of Utah
2011 - 2013	Supervisor, Johanna Lemons, University of Utah. Ph.D. Princeton University, 2011 Research Project: Kinase signaling in mitochondria <i>Trainee's Current Career Activities:</i> Medical Professional, North Carolina
2012 - 2017	Supervisor, Eric Fredrickson, University of Utah. (co-mentored with Chris Hill) Ph.D. University of Washington, 2012 Research Project: Mitochondrial protein quality control <i>Trainee's Current Career Activities:</i> Research Group Leader, ARUP
2015 - 2020	Supervisor, Esther Nuebel, University of Utah. Ph.D. Goethe Universitat, 2012 Research Project: Mitochondrial protein quality control
2015 - Present	Supervisor, Sara Nowinski, University of Utah. Ph.D. University of Texas, 2015 Research Project: Kinase signaling in mitochondria
2016 - Present	Supervisor, Kevin Hicks, University of Utah. Ph.D. University of Washington, 2015 Research Project: Metabolite-protein interactions
2016 - Present	Supervisor, Olga Zurita Rendon, University of Utah. Ph.D. McGill University, 2015

	Research Project: Mitochondrial protein quality control
2017 - Present	<i>Trainee's Current Career Activities:</i> Scientist, Casma Therapeutics Supervisor, Katja Dove, University of Utah. Ph.D. University of Washington, 2017
2018 - Present	Research Project: Metabolic control of stem cell homeostasis Supervisor, Jeffrey Morgan, University of Utah. Ph.D. Massachusetts Institute of Technology, 2018
2018 - Present	Research Project: Nutritional regulation of cellular RNAs Supervisor, Ahmad Cluntun, University of Utah. Ph.D. Cornell University, 2018
2018 - Present	Research Project: Metabolism of heart failure Supervisor, Alex Bott, University of Utah. Ph.D. Stony Brook University/Rutgers University, 2018
2019 - Present	Research Project: Nutrient regulation of transcription Supervisor, Sandra Lettlova, University of Utah. Ph.D. Czech Academy of Sciences, 2019
2019 - Present	Research Project: Regulation of cardiac metabolism. Supervisor, Ashish Toshniwal, University of Utah. Ph.D. Indian Institute of Science, 2019
	Research Project: Metabolism and cell growth and proliferation.
<u>PhD/Doctorate</u>	
2004 - 2006	Supervisor, Marc Elgort, University of Utah. B.S. University of California, San Diego, 1987
2004 - 2009	<i>Trainee's Current Career Activities:</i> Research Associate, ARUP Laboratories Supervisor, Huaixiang Hao, University of Utah. Ph.D. 2009 B.S. Xiamen University, China, July 2003 Research Project: Function of PAS Kinase in Mice <i>Thesis title:</i> "Cellular Energy Homeostasis: A Nutrient Sensing Kinase and a Mitochondrial Tumor Suppressor" <i>Trainee's Current Career Activities:</i> Research Investigator, Novartis Institute for Biomedical Research, Cambridge, MA
2006 - 2011	Supervisor, Jinmi Heo, University of Utah. Ph.D. 2011 B.S. Yongsei University, 2005 Research Project: Mitochondrial proteins <i>Thesis title:</i> "A Novel Player Involved in Mitochondrial Protein Quality Control"
2006 - 2011	<i>Trainee's Current Career Activities:</i> Scientist, Calico Life Sciences Supervisor, Thomas Orsak, University of Utah. Ph.D. 2011 B.S. Brigham Young University, December 2004 Research Project: Activators of PAS Kinase <i>Thesis title:</i> "Control of Metabolism: The Allosterome, Mitochondrial Proteins, and Mitochondrial Pyruvate Transport"
2006 - 2011	<i>Trainee's Current Career Activities:</i> Practicing patent attorney Supervisor, Caleb Cardon, University of Utah. Ph.D. 2011 B.S. University of Oregon, June 2005 Research Project: PAS Kinase and metabolic signaling <i>Thesis title:</i> "Per-Amt-Sim Kinase Regulates Nutrient Utilization and Growth"
2008 - 2015	<i>Trainee's Current Career Activities:</i> Postdoctoral Fellow, Duke University, David Goldstein's Lab Supervisor, Xiaoying Wu, University of Utah.

B.S. Shanghai Jiao Tong University, China, June 2007
 Research Project: PAS Kinase signaling
Trainee's Current Career Activities: Postdoctoral Fellow, University of Washington, David Eisenman Laboratory

2009 - 2015
 Supervisor, Yu-Chan Chen, University of Utah.
 B.S. National Chung-Hsing University, Taiwan, 2006
 M.S. National Chung-Hsing University, Taiwan, June 2008
 Research Project: Mitochondrial Proteins
Trainee's Current Career Activities: Scientist, 23andMe

2010 - 2018
 Supervisor, Jonathan VanVranken, University of Utah.
 B.S. Wittenberg University, May 2008
 Research Project: Mitochondrial factors in lipid metabolism
Trainee's Current Career Activities: Postdoctoral Fellow, Harvard Medical School, Steve Gygi Laboratory

2011 - 2017
 Supervisor, Jason Nielson, University of Utah.
 B.S. Brigham Young University, May 2010
 Research Project: Mitochondrial protein quality control
Trainee's Current Career Activities: Scientist, BioFire Defense

2012 - 2018
 Supervisor, Thomas Cameron Waller, University of Utah.
 B.S. Winthrop University, May 2011
 Research Project: Mitochondrial protein quality control
Trainee's Current Career Activities: Postdoctoral Fellow, UC-San Diego

2014 - 2022
 Supervisor, Peng Wei, University of Utah.
 B.S. Lanzhou University, 2011
 Research Project: Pyruvate metabolism in lymphoma

2017 - 2023
 Supervisor, Yeyun Ouyang, University of Utah.
 B.S. Ohio State University, 2016
 Research Project: Signaling mitochondrial fatty acid metabolism

2017 - 2023
 Supervisor, Jordan Berg, University of Utah.
 B.S. Brigham Young University, 2016
 Research Project: Pyruvate metabolism in lymphoma

MD, PhD

2011 - 2016
 Supervisor, John Schell, University of Utah.
 B.S. University of Utah, 2004
 Research Project: Mitochondrial pyruvate metabolism
Trainee's Current Career Activities: Residency, Massachusetts General Hospital, Oncology

2012 - 2016
 Supervisor, Kristofor Olson, University of Utah.
 B.S. University of Utah, 2009
 Research Project: Mitochondrial pyruvate metabolism in the heart
Trainee's Current Career Activities: Residency, University of Texas, Orthopedic Surgery

2015 - 2017
 Supervisor, Jason Tanner, University of Utah.
 B.S. University of Utah, 2010
 Research Project: Mitochondrial pyruvate metabolism in cancer
Trainee's Current Career Activities: Residency, Yale University, Emergency Medicine

2015 - 2020
 Supervisor, Claire Bensard, University of Utah.
 B.S. University of Colorado, 2012

Research Project: Mitochondrial pyruvate metabolism in cancer
Trainee's Current Career Activities: Completing medical school portion of MD/PhD program
 2017 - 2022 Supervisor, Jacob Winter, University of Utah.
 B.S. Westminster College, 2015
 Research Project: Mitochondrial Quality Control and Cancer

Masters

2004 - 2007 Supervisor, Eleanor Sundwall, University of Utah. M.S. 2007
 B.S. Indiana University, August 1999
 Research Project: Function of PAS Kinase in Yeast
Thesis title: "PSK1 and UGP1 are Key Regulators in the Yeast *Saccharomyces Cerevisiae* Cell Integrity Response Through the Secretory Pathway"
Trainee's Current Career Activities: Project Manager, Granite Technical Institute

Undergraduate

2005 - 2006 Supervisor, Joel Thompson, University of Utah
Trainee's Current Career Activities: Ph.D. student, University of Texas-Southwestern Medical Center
 2006 - 2011 Supervisor, Joshua Jaimez, University of Utah
 2009 - 2012 Supervisor, John Pham, University of Utah
Trainee's Current Career Activities: Medical student, Colorado University
 2009 - 2012 Supervisor, Corrin Cook, University of Utah
Trainee's Current Career Activities: Research Associate, Idaho Technologies
 2009 - 2013 Supervisor, KariAnne Rencher, University of Utah
 2012 Supervisor, Mitch Olson, University of Utah
 2013 - 2016 Supervisor, Espen Earl, University of Utah
 2015 - 2018 Supervisor, Christian Earl, University of Utah
 2015 Supervisor, Darius Baradaran, University of Utah
 2016 - 2017 Supervisor, Season Horstmeier, University of Utah
 2016 - 2017 Supervisor, Michael Glass, University of Utah
 2016 - 2017 Supervisor, McKay Allred, University of Utah
 2018 - 2020 Supervisor, Malika Kadirov, University of Utah
 2018 - 2019 Supervisor, Jared Potter, University of Utah

Graduate Student Committees

2003 - 2007 Member, Mary Anne Karren, University of Utah, PhD/Doctorate Committee
 2004 - 2007 Member, Brian O'Neill, University of Utah, PhD/Doctorate Committee
 2004 - 2007 Member, I-Chun Tsai, University of Utah, PhD/Doctorate Committee
 2004 - 2007 Member, Dan Richardson, University of Utah, PhD/Doctorate Committee
 2004 - 2007 Member, Debu Biswas, University of Utah, PhD/Doctorate Committee
 2005 - 2006 Member, Jack Landon, University of Utah, PhD/Doctorate Committee
 2005 - 2007 Member, Will Holland, University of Utah, PhD/Doctorate Committee
 2005 - 2008 Member, Kevin Rigby, University of Utah, PhD/Doctorate Committee
 2005 - 2009 Member, Yudi Soesanto, University of Utah, PhD/Doctorate Committee
 2005 - 2009 Member, Krishna Narra, University of Utah, PhD/Doctorate Committee
 2006 - 2007 Member, Hui-Ching Kuo, University of Utah, PhD/Doctorate Committee
 2006 - 2009 Member, Megan Bestwick, University of Utah, PhD/Doctorate Committee
 2006 - 2010 Member, Crystal Sloan, University of Utah, PhD/Doctorate Committee
 2006 - 2010 Member, Marc Elgort, University of Utah, PhD/Doctorate Committee
 2007 - 2010 Member, Priya Choudhry, University of Utah, PhD/Doctorate Committee
 2007 - 2010 Member, Mohammed Donia, University of Utah, PhD/Doctorate Committee

2007 - 2011	Member, Matt Sieber, University of Utah, PhD/Doctorate Committee
2007 - 2011	Member, Olessya Ilkun, University of Utah, PhD/Doctorate Committee
2007 - 2012	Member, Yi Zhu, University of Utah, PhD/Doctorate Committee
2007 - 2012	Member, Qian Guo, University of Utah, PhD/Doctorate Committee
2007 - 2013	Member, Bharat Jaishy, University of Utah, PhD/Doctorate Committee
2007 - 2011	Member, Andrew Oler, University of Utah, PhD/Doctorate Committee
2008 - 2013	Member, Kyoung Sim Han, University of Utah, PhD/Doctorate Committee
2009 - 2010	Member, Matthew Jones, University of Utah, Masters Committee
2009 - 2011	Member, Bradley Green, University of Utah, PhD/Doctorate Committee
2009 - 2011	Member, Elliot Ferris, University of Utah, PhD/Doctorate Committee
2009 - 2013	Member, Tammy Nguyen, University of Utah, PhD/Doctorate Committee
2009 - 2013	Member, Judith Pickens Simcox, University of Utah, PhD/Doctorate Committee
2009 - 2014	Member, Jyoti Misra, University of Utah, PhD/Doctorate Committee
2009 - 2014	Member, Un Na, University of Utah, PhD/Doctorate Committee
2010 - 2017	Member, Ashot Sargsyan, University of Utah, PhD/Doctorate Committee
2010 - 2012	Member, Shelly Sorrells, University of Utah, PhD/Doctorate Committee
2010 - 2014	Member, Daniel Bricker, University of Utah, PhD/Doctorate Committee
2010 - 2015	Member, Yin Shen Wee, University of Utah, PhD/Doctorate Committee
2010 - 2016	Member, William Barry, University of Utah, PhD/Doctorate Committee
2010 - 2018	Member, Raghav Kalia, University of Utah, PhD/Doctorate Committee
2011 - 2012	Member, Dallas Shi, University of Utah, PhD/Doctorate Committee
2011 - 2012	Member, Ethan Howell, University of Utah, Masters Committee
2011 - 2015	Member, Yan Gao, University of Utah, PhD/Doctorate Committee
2011 - 2016	Member, Katie Mitzelfelt, University of Utah, PhD/Doctorate Committee
2011 - 2016	Member, Morgan Fetherolf, University of Utah, PhD/Doctorate Committee
2012 - 2018	Member, Zhizhou Ye, University of Utah, PhD/Doctorate Committee
2012 - 2018	Member, Sarah Safran, University of Utah, PhD/Doctorate Committee
2012 - 2017	Member, Sarah Apple, University of Utah, PhD/Doctorate Committee
2012 - 2017	Member, Andrew Melber, University of Utah, PhD/Doctorate Committee
2012 - 2018	Member, Daniel Reich, University of Utah, PhD/Doctorate Committee
2012 - 2019	Member, Gisela Geoghegan, University of Utah, PhD/Doctorate Committee
2013 - 2014	Member, Lipika Salaye, University of Utah, PhD/Doctorate Committee
2013 - 2016	Member, Cole Anderson, University of Utah, PhD/Doctorate Committee
2013 - 2017	Member, Jefferson Brown, University of Utah, PhD/Doctorate Committee
2013 - 2017	Member, Rana Smalling, University of Utah, PhD/Doctorate Committee
2013 - 2018	Member, Nathaniel Talledge, University of Utah, PhD/Doctorate Committee
2013 - 2018	Member, Akshay Moharir, University of Utah, PhD/Doctorate Committee
2013 - 2017	Member, Rifat Bhaskar, University of Utah, PhD/Doctorate Committee
2013 - 2018	Member, Khondaker Bhaskar, University of Utah, PhD/Doctorate Committee
2013 - 2017	Member, Erin Dickson, University of Utah, PhD/Doctorate Committee
2015 - 2016	Member, Thane Campbell, University of Utah, PhD/Doctorate Committee
2015 - 2019	Member, Milind Chalishazar, University of Utah, PhD/Doctorate Committee
2015 - 2019	Member, Alyssa Litwiller, University of Utah, PhD/Doctorate Committee
2015 - Present	Member, Jinze Li, University of Utah, PhD/Doctorate Committee
2015 - Present	Member, Max Schuler, University of Utah, PhD/Doctorate Committee
2016 - 2019	Member, Vanja Panic, University of Utah, PhD/Doctorate Committee
2016 - Present	Member, Erika Aoyama, University of Utah, PhD/Doctorate Committee
2016 - Present	Member, Megan Okada, University of Utah, PhD/Doctorate Committee
2017 - Present	Member, Marco Marchetti, University of Utah, PhD/Doctorate Committee
2017 - Present	Member, Casey Hughes, University of Utah, PhD/Doctorate Committee

2017 - Present	Member, Seyi Falekun, University of Utah, PhD/Doctorate Committee
2017 - Present	Member, Jordan Johnson, University of Utah, PhD/Doctorate Committee
2017 - Present	Member, Trevor Tippetts, University of Utah, PhD/Doctorate Committee
2017 - Present	Member, Amanda Mixon, University of Utah, PhD/Doctorate Committee
2018 - Present	Member, Kathryn Davis, University of Utah, PhD/Doctorate Committee
2018 - Present	Member, Tanya Espino, University of Utah, PhD/Doctorate Committee
2018 - Present	Member, Tianyao Xiao, University of Utah, PhD/Doctorate Committee
2018 - Present	Member, Mitchell Wopat, University of Utah, PhD/Doctorate Committee
2019 – Present	Member, Annelise Poss, University of Utah, PhD/Doctorate Committee
2019 – Present	Member, Jesse Velasco, University of Utah, PhD/Doctorate Committee
2019 – Present	Member, Samuel Hickenlooper, University of Utah, PhD/Doctorate Committee
2019 - Present	Member, Nidhi Raghuram, University of Utah, PhD/Doctorate Committee
2019 - Present	Member, Faith Bowman, University of Utah, PhD/Doctorate Committee
2019 – Present	Member, Guoxun Cao, University of Utah, PhD/Doctorate Committee
2020 – Present	Member, Sangeetha Balasubramanian, University of Utah, PhD/Doctorate Cmte
2020 – Present	Member, Kevin Chui, University of Utah, PhD/Doctorate Committee
2020 – Present	Member, Emily Tippetts, University of Utah, PhD/Doctorate Committee
2020 – Present	Member, Rebekah Nicholson, University of Utah, PhD/Doctorate Committee
2021 – Present	Member, Gabriella Fort, University of Utah, PhD/Doctorate Committee
2021 – Present	Member, Meghan Curtin, University of Utah, PhD/Doctorate Committee
2021 – Present	Member, Hunter Levis, University of Utah, PhD/Doctorate Committee
2021 – Present	Member, Kyle Dunlap, University of Utah, PhD/Doctorate Committee
2022 – Present	Member, Jessica Pita-Aquino, University of Utah, PhD/Doctorate Committee
2022 – Present	Member, Mark Lee, University of Utah, PhD/Doctorate Committee
2022 – Present	Member, Rolande Meudom, University of Utah, PhD/Doctorate Committee
2022 – Present	Member, Sara Hoppe, University of Utah, PhD/Doctorate Committee
2023 – Present	Member, Joseph Crapse, University of Utah, PhD/Doctorate Committee

Educational Lectures

Didactic Lectures

2005 - 2018	BIO C 7500, 1 Lecture
2006 - Present	BIO C 6600, 1-2 Lectures per year

PEER-REVIEWED JOURNAL ARTICLES

1. Hamilton SE, Pitts AE, Katipally RR, Jia X, **Rutter JP**, Davies BA, Shay JW, Wright WE, Corey DR (1997). Identification of determinants for inhibitor binding within the RNA active site of human telomerase using PNA scanning. *Biochemistry*, 36(39), 11873-80.
2. Garcia JA, Zhang D, Estill SJ, Michnoff C, **Rutter J**, Reick M, Scott K, Diaz-Arrastia R, McKnight SL (2000). Impaired cued and contextual memory in NPAS2-deficient mice. *Science*, 288(5474), 2226-30.
3. **Rutter J**, Reick M, Wu LC, McKnight SL (2001). Regulation of clock and NPAS2 DNA binding by the redox state of NAD cofactors. *Science*, 293(5529), 510-4.
4. **Rutter J**, Michnoff CH, Harper SM, Gardner KH, McKnight SL (2001). PAS kinase: an evolutionarily conserved PAS domain-regulated serine/threonine kinase. *Proc Natl Acad Sci U S A*, 98(16), 8991-6.
5. Amezcua CA, Harper SM, **Rutter J**, Gardner KH (2002). Structure and interactions of PAS kinase N-terminal PAS domain: model for intramolecular kinase regulation. *Structure (Camb)*, 10(10), 1349-61.
6. **Rutter J**, Probst BL, McKnight SL (2002). Coordinate regulation of sugar flux and translation by

- PAS kinase. *Cell*, 111(1), 17-28.
7. **Rutter J** (2002). Essay: Amersham Biosciences and Science Prize. PAS domains and metabolic status signaling. *Science*, 298(5598), 1567-8.
 8. Dioum EM, **Rutter J**, Tuckerman JR, Gonzalez G, Gilles-Gonzalez MA, McKnight SL (2002). NPAS2: a gas-responsive transcription factor. *Science*, 298(5602), 2385-7.
 9. da Silva Xavier G, **Rutter J**, Rutter GA (2004). Involvement of Per-Arnt-Sim (PAS) kinase in the stimulation of preproinsulin and pancreatic duodenum homeobox 1 gene expression by glucose. *Proc Natl Acad Sci U S A*, 101(22), 8319-24.
 10. Wilson WA, Skurat AV, Probst B, de Paoli-Roach A, Roach PJ, **Rutter J** (2005). Control of mammalian glycogen synthase by PAS kinase. *Proc Natl Acad Sci U S A*, 102(46), 16596-601.
 11. Lindsley JE, **Rutter J** (2006). Whence cometh the allosterome? *Proc Natl Acad Sci U S A*, 103(28), 10533-5.
 12. An R, da Silva Xavier G, Hao HX, Semplici F, **Rutter J**, Rutter GA (2006). Regulation by Per-Arnt-Sim (PAS) kinase of pancreatic duodenal homeobox-1 nuclear import in pancreatic beta-cells. *Biochem Soc Trans*, 34(Pt 5), 791-3.
 13. Mehlgarten C, Zink S, **Rutter J**, Schaffrath R (2007). Dosage suppression of the *Kluyveromyces lactis* zymocin by *Saccharomyces cerevisiae* ISR1 and UGP1. *FEMS Yeast Research*, 7(5), 722-30.
 14. Smith TL, **Rutter J** (2007). Regulation of glucose partitioning by PAS kinase and Ugp1 phosphorylation. *Mol Cell*, 26(4), 491-9.
 15. 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.
 16. Grose JH, Smith TL, Sabic H, **Rutter J** (2007). Yeast PAS kinase coordinates glucose partitioning in response to metabolic and cell integrity signaling. *EMBO J*, 26(23), 4824-30.
 17. Beumer KJ, Trautman JK, Bozas A, Liu JL, **Rutter J**, Gall JG, Carroll D (2008). Efficient gene targeting in *Drosophila* by direct embryo injection with zinc-finger nucleases. *Proc Natl Acad Sci U S A*, 105(50), 19821-6.
 18. Grose JH, Sundwall E, **Rutter J** (2009). Regulation and function of yeast PAS kinase: a role in the maintenance of cellular integrity. *Cell Cycle*, 8(12), 1824-32.
 19. Hao HX, Khalimonchuk O, Schradars M, Dephore N, Bayley JP, Kunst H, Devilee P, Cremers CW, Schiffman JD, Bentz BG, Gygi SP, Winge DR, Kremer H, **Rutter J** (2009). SDH5, a gene required for flavination of succinate dehydrogenase, is mutated in paraganglioma. *Science*, 325(5944), 1139-42.
 20. Fontes G, Semache M, Hagman DK, Tremblay C, Shah R, Rhodes CJ, **Rutter J**, Poitout V (2009). Involvement of Per-Arnt-Sim Kinase and extracellular-regulated kinases-1/2 in palmitate inhibition of insulin gene expression in pancreatic beta-cells. *Diabetes*, 58(9), 2048-58.
 21. An R, da Silva Xavier G, Semplici F, Vakhshouri S, Hao HX, **Rutter J**, Pagano MA, Meggio F, Pinna LA, Rutter GA (2010). Pancreatic and duodenal homeobox 1 (PDX1) phosphorylation at serine-269 is HIPK2-dependent and affects PDX1 subnuclear localization. *Biochem Biophys Res Commun*, 399(2), 155-61.
 22. Heo JM, Livnat-Levanon N, Taylor EB, Jones KT, Dephore N, Ring J, Xie J, Brodsky JL, Madeo F, Gygi SP, Ashrafi K, Glickman MH, **Rutter J** (2010). A stress-responsive system for mitochondrial protein degradation. *Mol Cell*, 40(3), 465-80.
 23. Kikani CK, Antonysamy SA, Bonanno JB, Romero R, Zhang FF, Russell M, Gheyi T, Iizuka M, Emtage S, Sauder JM, Turk BE, Burley SK, **Rutter J** (2010). Structural bases of PAS domain-regulated kinase (PASK) activation in the absence of activation loop phosphorylation. *J Biol Chem*, 285(52), 41034-43.
 24. da Silva Xavier G, Farhan H, Kim H, Caxaria S, Johnson P, Hugues S, Bugiani M, Marselli L, Marchetti P, Birzele F, Sun G, Scharfmann R, **Rutter J**, Siniakowicz K, Weir G, Parker H, Reimann F, Gribble FM, Rutter GA (2011). Per-arnt-sim (PAS) domain-containing protein kinase is

- downregulated in human islets in type 2 diabetes and regulates glucagon secretion. *Diabetologia*, 54(4), 819-27.
25. Semplici F, Vaxillaire M, Fogarty S, Semache M, Bonnefond A, Fontes G, Philippe J, Meur G, Diraison F, Sessions RB, **Rutter J**, Poitout V, Froguel P, Rutter GA (2011). Human mutation within Per-Arnt-Sim (PAS) domain-containing protein kinase (PASK) causes basal insulin hypersecretion. *J Biol Chem*, 286(51), 44005-14.
 26. Orsak T, Smith TL, Eckert D, Lindsley JE, Borges CR, **Rutter J** (2012). Revealing the allosterome: systematic identification of metabolite-protein interactions. *Biochemistry*, 51(1), 225-32.
 27. Cardon CM, Beck T, Hall MN, **Rutter J** (2012). PAS kinase promotes cell survival and growth through activation of Rho1. *Sci Signal*, 5(209), ra9.
 28. Chen YC, Taylor EB, Dephoure N, Heo JM, Tonhato A, Papandreou I, Nath N, Denko NC, Gygi SP, **Rutter J** (2012). Identification of a protein mediating respiratory supercomplex stability. *Cell Metab*, 15(3), 348-60.
 29. 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.
 30. Heo JM, Nielson JR, Dephoure N, Gygi SP, **Rutter J** (2013). Intramolecular interactions control Vms1 translocation to damaged mitochondria. *Mol Biol Cell*, 24(9), 1263-73.
 31. Semache M, Zarrouki B, Fontes G, Fogarty S, Kikani C, Chawki MB, **Rutter J**, Poitout V (2013). Per-Arnt-Sim kinase regulates pancreatic duodenal homeobox-1 protein stability via phosphorylation of glycogen synthase kinase 3beta in pancreatic beta-cells. *J Biol Chem*, 288(34), 24825-33.
 32. Chen YC, **Rutter J** (2014). Pressing mitochondrial genetics forward. *Cell Rep*, 7(3), 599-600.
 33. Wu X, Romero D, Swiatek WI, Dorweiler I, Kikani CK, Sabic H, Zweifel BS, McKearn J, Blitzer JT, Nickols GA, **Rutter J** (2014). PAS kinase drives lipogenesis through SREBP-1 maturation. *Cell Rep*, 8(1), 242-55.
 34. Chen YC, Umanah GK, Dephoure N, Andrabi SA, Gygi SP, Dawson TM, Dawson VL, **Rutter J** (2014). Msp1/ATAD1 maintains mitochondrial function by facilitating the degradation of mislocalized tail-anchored proteins. *EMBO J*, 33(14), 1548-64.
 35. Van Vranken JG, Bricker DK, Dephoure N, Gygi SP, Cox JE, Thummel CS, **Rutter J** (2014). SDHAF4 promotes mitochondrial succinate dehydrogenase activity and prevents neurodegeneration. *Cell Metab*, 20(2), 241-52.
 36. Na U, Yu W, Cox J, Bricker DK, Brockmann K, **Rutter J**, Thummel CS, Winge DR (2014). The LYR factors SDHAF1 and SDHAF3 mediate maturation of the iron-sulfur subunit of succinate dehydrogenase. *Cell Metab*, 20(2), 253-66.
 37. X. Wu, D. Romero, W. Lu, Swaitek, I. Dorweiler, C.K. Kikani, H. Savic, B.S. Zweifel, J. McKearn, J.T. Blitzer, G.A. Nickols, J. Rutter (2014). PAS Kinase drives lipogenesis through SREBP-1 maturation. *Cell Rep*, 8(242).
 38. Schell JC, Olson KA, Jiang L, Hawkins AJ, Van Vranken JG, Xie J, Egnatchik RA, Earl EG, DeBerardinis RJ, **Rutter J** (2014). A role for the mitochondrial pyruvate carrier as a repressor of the Warburg effect and colon cancer cell growth. *Mol Cell*, 56(3), 400-13.
 39. Yang C, Ko B, Hensley CT, Jiang L, Wasti AT, Kim J, Sudderth J, Calvaruso MA, Lumata L, Mitsche M, **Rutter J**, Merritt ME, DeBerardinis RJ (2014). Glutamine oxidation maintains the TCA cycle and cell survival during impaired mitochondrial pyruvate transport. *Mol Cell*, 56(3), 414-24.
 40. Van Vranken JG, **Rutter J** (2015). You Down With ETC? Yeah, You Know D! *Cell*, 162(3), 471-3.
 41. Gray LR, Sultana MR, Rauckhorst AJ, Oonthonpan L, Tompkins SC, Sharma A, Fu X, Miao R, Pewa AD, Brown KS, Lane EE, Dohlman A, Zepeda-Orozco D, Xie J, **Rutter J**, Norris AW, Cox JE, Burgess SC, Potthoff MJ, Taylor EB (2015). Hepatic Mitochondrial Pyruvate Carrier 1 Is Required for Efficient Regulation of Gluconeogenesis and Whole-Body Glucose Homeostasis. *Cell Metab*, 22(4), 669-81.

42. Van Vranken JG, Jeong MY, Wei P, Chen YC, Gygi SP, Winge DR, **Rutter J** (2016). The mitochondrial acyl carrier protein (ACP) coordinates mitochondrial fatty acid synthesis with iron sulfur cluster biogenesis. *LID - 10.7554/eLife.17828 [doi]LID - e17828 [pii]. Elife*, 5.
43. Van Vranken JG, **Rutter J** (2016). The Whole (Cell) Is Less Than the Sum of Its Parts. *Cell*, 166(5), 1078-1079.
44. Kikani CK, Wu X, Paul L, Sabic H, Shen Z, Shakya A, Keefe A, Villanueva C, Kardon G, Graves B, Tantin D, **Rutter J** (2016). Pask integrates hormonal signaling with histone modification via Wdr5 phosphorylation to drive myogenesis. *LID - 10.7554/eLife.17985 [doi]LID - e17985 [pii]. Elife*, 5.
45. Diakos NA, Navankasattusas S, Abel ED, **Rutter J**, McCreath L, Ferrin P, McKellar SH, Miller DV, Park SY, Richardson RS, Deberardinis R, Cox JE, Kfoury AG, Selzman CH, Stehlik J, Fang JC, Li DY, Drakos SG (2016). Evidence of Glycolysis Up-Regulation and Pyruvate Mitochondrial Oxidation Mismatch During Mechanical Unloading of the Failing Human Heart: Implications for Cardiac Reloading and Conditioning. *JACC Basic Transl Sci*, 1(6), 432-444.
46. Brill JA, **Rutter J** (2017). Quality control and organelle trafficking: ensuring functional organelles and cells. *Mol Biol Cell*, 28(6), 701-702.
47. Sandoval IT, Delacruz RG, Miller BN, Hill S, Olson KA, Gabriel AE, Boyd K, Satterfield C, Remmen HV, **Rutter J**, Jones DA (2017). A metabolic switch controls intestinal differentiation downstream of Adenomatous polyposis coli (APC). *LID - 10.7554/eLife.22706 [doi]LID - e22706 [pii]. Elife*, 6.
48. Schell JC, **Rutter J** (2017). Mitochondria link metabolism and epigenetics in haematopoiesis. *Nat Cell Biol*, 19(6), 589-591.
49. Cory SA, Van Vranken JG, Brignole EJ, Patra S, Winge DR, Drennan CL, **Rutter J**, Barondeau DP (2017). Structure of human Fe-S assembly subcomplex reveals unexpected cysteine desulfurase architecture and acyl-ACP-ISC11 interactions. *Proc Natl Acad Sci U S A*, 114(27), E5325-E5334.
50. Tyagi E, Liu B, Li C, Liu T, **Rutter J**, Grossman D (2017). Loss of p16(INK4A) stimulates aberrant mitochondrial biogenesis through a CDK4/Rb-independent pathway. *Oncotarget*, 8(34), 55848-55862.
51. Schell JC, Wisidagama DR, Bensard C, Zhao H, Wei P, Tanner J, Flores A, Mohlman J, Sorensen LK, Earl CS, Olson KA, Miao R, Waller TC, Delker D, Kanth P, Jiang L, DeBerardinis RJ, Bronner MP, Li DY, Cox JE, Christofk HR, Lowry WE, Thummel CS, **Rutter J** (2017). Control of intestinal stem cell function and proliferation by mitochondrial pyruvate metabolism. *Nat Cell Biol*, 19(9), 1027-1036.
52. Flores A, Schell J, Krall AS, Jelinek D, Miranda M, Grigorian M, Braas D, White AC, Zhou JL, Graham NA, Graeber T, Seth P, Evseenko D, Collier HA, **Rutter J**, Christofk HR, Lowry WE (2017). Lactate dehydrogenase activity drives hair follicle stem cell activation. *Nat Cell Biol*, 19(9), 1017-1026.
53. Simcox J, Geoghegan G, Maschek JA, Bensard CL, Pasquali M, Miao R, Lee S, Jiang L, Huck I, Kershaw EE, Donato AJ, Apte U, Longo N, **Rutter J**, Schreiber R, Zechner R, Cox J, Villanueva CJ (2017). Global Analysis of Plasma Lipids Identifies Liver-Derived Acylcarnitines as a Fuel Source for Brown Fat Thermogenesis. *Cell Metab*, 26(3), 509-522.e6.
54. Tanner JM, Bensard C, Wei P, Krah NM, Schell JC, Gardiner J, Schiffman J, Lessnick SL, **Rutter J** (2017). EWS/FLI is a Master Regulator of Metabolic Reprogramming in Ewing Sarcoma. *Mol Cancer Res*, 15(11), 1517-1530.
55. Nielson JR, Fredrickson EK, Waller TC, Rendon OZ, Schubert HL, Lin Z, Hill CP, **Rutter J** (2017). Sterol Oxidation Mediates Stress-Responsive Vms1 Translocation to Mitochondria. *Mol Cell*, 68(4), 673-685.e6.
56. Zurita Rendon O, Fredrickson EK, Howard CJ, Van Vranken J, Fogarty S, Tolley ND, Kalia R, Osuna BA, Shen PS, Hill CP, Frost A, **Rutter J** (2018). Vms1p is a release factor for the ribosome-associated quality control complex. *Nat Commun*, 9(1), 2197.
57. Van Vranken JG, Nowinski SM, Clowers KJ, Jeong MY, Ouyang Y, Berg JA, Gygi JP, Gygi SP,

- Winge DR, **Rutter J** (2018). ACP Acylation Is an Acetyl-CoA-Dependent Modification Required for Electron Transport Chain Assembly. *Mol Cell*, 71(4), 567-580.e4.
58. Sips PY, Shi X, Musso G, Nath AK, Zhao Y, Nielson J, Morningstar J, Kelly AE, Mikell B, Buys E, Beberta V, **Rutter J**, Davisson VJ, Mahon S, Brenner M, Boss GR, Peterson RT, Gerszten RE, MacRae CA. Identification of specific metabolic pathways as druggable targets regulating the sensitivity to cyanide poisoning. *PLoS One*. 2018 Jun 7;13(6):e0193889.
 59. Jeong MY, **Rutter J**, Chou DH. Display of Single-Chain Insulin-like Peptides on a Yeast Surface. *Biochemistry*. 2019 Jan 22;58(3):182-188.
 60. Vázquez-Arreguín K, Bensard C, Schell JC, Swanson E, Chen X, **Rutter J**, Tantin D. Oct1/Pou2f1 is selectively required for colon regeneration and regulates colon malignancy. *PLoS Genet*. 2019 May 6;15(5):e1007687.
 61. Kikani CK, Wu X, Fogarty S, Kang SAW, Dephore N, Gygi SP, Sabatini DM, **Rutter J**. Activation of PASK by mTORC1 is required for the onset of the terminal differentiation program. *Proc Natl Acad Sci U S A*. 2019 May 21;116(21):10382-10391.
 62. Chaurasia B, Tippetts TS, Mayoral Monibas R, Liu J, Li Y, Wang L, Wilkerson JL, Sweeney CR, Pereira RF, Sumida DH, Maschek JA, Cox JE, Kaddai V, Lancaster GI, Siddique MM, Poss A, Pearson M, Satapati S, Zhou H, McLaren DG, Previs SF, Chen Y, Qian Y, Petrov A, Wu M, Shen X, Yao J, Nunes CN, Howard AD, Wang L, Erion MD, **Rutter J**, Holland WL, Kelley DE, Summers SA. Targeting a ceramide double bond improves insulin resistance and hepatic steatosis. *Science*. 2019 Jul 26;365(6451):386-392.
 63. Heden TD, Johnson JM, Ferrara PJ, Eshima H, Verkerke ARP, Wentzler EJ, Siripoksap 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. Mitochondrial PE potentiates respiratory enzymes to amplify skeletal muscle aerobic capacity. *Sci Adv*. 2019 Sep 11;5(9):eaax8352.
- Hao Q, Heo JM, Nocek BP, Hicks KG, Stoll VS, Remarcik C, Hackett S, LeBon L, Jain R, Eaton D, Rutter J, Wong YL, Sidrauski C. Sugar phosphate activation of the stress sensor eIF2B. *Nat Commun*. 2021 Jun 8;12(1):3440.
- De la Rossa A, Laporte MH, Astori S, Marissal T, Montessuit S, Sheshadri P, Ramos-Fernández E, Mendez P, Khani A, Quairiaux C, Taylor EB, Rutter J, Nunes JM, Carleton A, Duchon MR, Sandi C, and Martinou J-C, Paradoxical neuronal hyperexcitability in a mouse model of mitochondrial pyruvate import deficiency. *bioRxiv*, 2021: p. 2020.12.22.423903.
- Kidwell CU, Casalini JR, Pradeep S, Scherer SD, Greiner D, Johnson JS, Olson GS, Rutter J, Welm AL, Zangle TA, and Roh-Johnson M, Laterally transferred macrophage mitochondria act as a signaling source promoting cancer cell proliferation. *bioRxiv*, 2021: p. 2021.08.10.455713.
- Li Y, Chaurasia B, Kaddai V, Wilkerson JL, Maschek JA, Cox JE, Wei P, Bensard C, Meikle PJ, Clevers H, Shayman JA, Hirabayashi Y, Holland WL, Rutter J, and Summers SA, Serine Palmitoyltransferase Controls Stemness of Intestinal Progenitors. *bioRxiv*, 2020: p. 2020.12.03.409128.
- Shimura D, Nuebel E, Baum R, Xiao S, Warren JS, Hong T, Rutter J, and Shaw RM, Protective mitochondrial fission induced by stress responsive protein GJA1-20k. *bioRxiv*, 2021: p.

2021.05.05.442750.

Bezerra GA, Holenstein A, Foster WR, Xie B, Hicks KG, Bürer C, Lutz S, Mukherjee A, Sarkar D, Bhattacharya D, Rutter J, Talukdar A, Brown PJ, Luo M, Shi L, Froese DS, Yue WW. Identification of small molecule allosteric modulators of 5,10-methylenetetrahydrofolate reductase (MTHFR) by targeting its unique regulatory domain. *Biochimie*. 2021 Apr;183:100-107.

Cluntun AA, Badolia R, Lettlova S, Parnell KM, Shankar TS, Diakos NA, Olson KA, Taleb I, Tatum SM, Berg JA, Cunningham CN, Van Ry T, Bott AJ, Krokidi AT, Fogarty S, Skedros S, Swiatek WI, Yu X, Luo B, Merx S, Navankasattusas S, Cox JE, Ducker GS, Holland WL, McKellar SH, Rutter J, Drakos SG. The pyruvate-lactate axis modulates cardiac hypertrophy and heart failure. *Cell Metab*. 2021 Mar 2;33(3):629-648.e10.

Berg JA, Zhou Y, Waller TC, Ouyang Y, Nowinski SM, Van Ry T, George I, Cox JE, Wang B, and Rutter J, Gazing into the Metaverse: Automated exploration and contextualization of metabolic data. *bioRxiv*, 2020: p. 2020.06.25.171850.

Fogarty S, Ouyang Y, Li L, Chen YC, Rane H, Manoni F, Parra KJ, Rutter J, Harran PG. Callyspongiolide Is a Potent Inhibitor of the Vacuolar ATPase. *J Nat Prod*. 2020 Nov 25;83(11):3381-3386.

Zhang Y, Taufalele PV, Cochran JD, Robillard-Frayne I, Marx JM, Soto J, Rauckhorst AJ, Tayyari F, Pewa AD, Gray LR, Teesch LM, Puchalska P, Funari TR, McGlaflin R, Zimmerman K, Kutschke WJ, Cassier T, Hitchcock S, Lin K, Kato KM, Stueve JL, Haff L, Weiss RM, Cox JE, Rutter J, Taylor EB, Crawford PA, Lewandowski ED, Des Rosiers C, Abel ED. Mitochondrial pyruvate carriers are required for myocardial stress adaptation. *Nat Metab*. 2020 Nov;2(11):1248-1264.

Wang Z, Ning T, Song A, Rutter J, Wang QA, Jiang L. Chronic cold exposure enhances glucose oxidation in brown adipose tissue. *EMBO Rep*. 2020 Nov 5;21(11):e50085.

Nowinski SM, Solmonson A, Rusin SF, Maschek JA, Bensard CL, Fogarty S, Jeong MY, Lettlova S, Berg JA, Morgan JT, Ouyang Y, Naylor BC, Paulo JA, Funai K, Cox JE, Gygi SP, Winge DR, DeBerardinis RJ, Rutter J. Mitochondrial fatty acid synthesis coordinates oxidative metabolism in mammalian mitochondria. *Elife*. 2020 Aug 17;9:e58041.

Panic V, Pearson S, Banks J, Tippetts TS, Velasco-Silva JN, Lee S, Simcox J, Geoghegan G, Bensard CL, van Ry T, Holland WL, Summers SA, Cox J, Ducker GS, Rutter J, Villanueva CJ. Mitochondrial pyruvate carrier is required for optimal brown fat thermogenesis. *Elife*. 2020 Aug 14;9:e52558.

Bezerra GA, Foster WR, Bailey HJ, Hicks KG, Sauer SW, Dimitrov B, McCorvie TJ, Okun JG, Rutter J, Kölker S, Yue WW. Crystal structure and interaction studies of human DHTKD1 provide insight into a mitochondrial megacomplex in lysine catabolism. *IUCrJ*. 2020 Jun 10;7(Pt 4):693-706.

Badolia R, Ramadurai DKA, Abel ED, Ferrin P, Taleb I, Shankar TS, Krokidi AT, Navankasattusas S, McKellar SH, Yin M, Kfoury AG, Wever-Pinzon O, Fang JC, Selzman CH, Chaudhuri D, Rutter J, Drakos SG. The Role of Nonglycolytic Glucose Metabolism in Myocardial Recovery Upon

Mechanical Unloading and Circulatory Support in Chronic Heart Failure. *Circulation*. 2020 Jul 21;142(3):259-274.

Swiatek W, Parnell KM, Nickols GA, Scharschmidt BF, Rutter J. Validation of PAS Kinase, a Regulator of Hepatic Fatty Acid and Triglyceride Synthesis, as a Therapeutic Target for Nonalcoholic Steatohepatitis. *Hepatology*. 2020 Mar 24;4(5):696-707.

Ekiz HA, Ramstead AG, Lee SH, Nelson MC, Bauer KM, Wallace JA, Hu R, Round JL, Rutter J, Drummond MJ, Rao DS, O'Connell RM. T Cell-Expressed microRNA-155 Reduces Lifespan in a Mouse Model of Age-Related Chronic Inflammation. *J Immunol*. 2020 Apr 15;204(8):2064-2075.

Ramstead AG, Wallace JA, Lee SH, Bauer KM, Tang WW, Ekiz HA, Lane TE, Cluntun AA, Bettini ML, Round JL, Rutter J, O'Connell RM. Mitochondrial Pyruvate Carrier 1 Promotes Peripheral T Cell Homeostasis through Metabolic Regulation of Thymic Development. *Cell Rep*. 2020 Mar 3;30(9):2889-2899.e6.

Berg JA, Belyeu JR, Morgan JT, Ouyang Y, Bott AJ, Quinlan AR, Gertz J, Rutter J. XPRESSyourself: Enhancing, standardizing, and automating ribosome profiling computational analyses yields improved insight into data. *PLoS Comput Biol*. 2020 Jan 31;16(1):e1007625.

Waller TC, Berg JA, Lex A, Chapman BE, Rutter J. Compartment and hub definitions tune metabolic networks for metabolomic interpretations. *Gigascience*. 2020 Jan 1;9(1):giz137.

Bensard CL, Wisidagama DR, Olson KA, Berg JA, Krah NM, Schell JC, Nowinski SM, Fogarty S, Bott AJ, Wei P, Dove KK, Tanner JM, Panic V, Cluntun A, Lettlova S, Earl CS, Namnath DF, Vázquez-Arreguín K, Villanueva CJ, Tantin D, Murtaugh LC, Evason KJ, Ducker GS, Thummel CS, Rutter J. Regulation of Tumor Initiation by the Mitochondrial Pyruvate Carrier. *Cell Metab*. 2020 Feb 4;31(2):284-300.e7.

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. Mitochondrial PE potentiates respiratory enzymes to amplify skeletal muscle aerobic capacity. *Sci Adv*. 2019 Sep 11;5(9):eaax8352.

Chaurasia B, Tippetts TS, Mayoral Monibas R, Liu J, Li Y, Wang L, Wilkerson JL, Sweeney CR, Pereira RF, Sumida DH, Maschek JA, Cox JE, Kaddai V, Lancaster GI, Siddique MM, Poss A, Pearson M, Satapati S, Zhou H, McLaren DG, Previs SF, Chen Y, Qian Y, Petrov A, Wu M, Shen X, Yao J, Nunes CN, Howard AD, Wang L, Erion MD, Rutter J, Holland WL, Kelley DE, Summers SA. Targeting a ceramide double bond improves insulin resistance and hepatic steatosis. *Science*. 2019 Jul 26;365(6451):386-392.

Kikani CK, Wu X, Fogarty S, Kang SAW, Dephore N, Gygi SP, Sabatini DM, Rutter J. Activation of PASK by mTORC1 is required for the onset of the terminal differentiation program. *Proc Natl Acad Sci U S A*. 2019 May 21;116(21):10382-10391.

Vázquez-Arreguín K, Bensard C, Schell JC, Swanson E, Chen X, Rutter J, Tantin D. Oct1/Pou2f1 is selectively required for colon regeneration and regulates colon malignancy. *PLoS Genet*. 2019 May 6;15(5):e1007687.

Jeong MY, Rutter J, Chou DH. Display of Single-Chain Insulin-like Peptides on a Yeast Surface. *Biochemistry*. 2019 Jan 22;58(3):182-188.

Hicks KG, Cluntun AA, Schubert HL, Hackett SR, Berg JA, Leonard PG, Ajalla Aleixo MA, Zhou Y, Bott AJ, Salvatore SR, Chang F, Blevins A, Barta P, Tilley S, Leifer A, Guzman A, Arok A, Fogarty S, Winter JM, Ahn HC, Allen KN, Block S, Cardoso IA, Ding J, Dreveny I, Gasper WC, Ho Q, Matsuura A, Palladino MJ, Prajapati S, Sun P, Tittmann K, Tolan DR, Unterlass J, VanDemark AP, Vander Heiden MG, Webb BA, Yun CH, Zhao P, Wang B, Schopfer FJ, Hill CP, Nonato MC, Muller FL, Cox JE, Rutter J. Protein-metabolite interactomics of carbohydrate metabolism reveal regulation of lactate dehydrogenase. *Science*. 2023 Mar 10;379(6636):996-1003. doi: 10.1126/science.abm3452. Epub 2023 Mar 9. PMID: 36893255.

Webb BD, Nowinski SM, Solmonson A, Ganesh J, Rodenburg RJ, Leandro J, Evans A, Vu HS, Naidich TP, Gelb BD, DeBerardinis RJ, Rutter J, Houten SM. Recessive pathogenic variants in *MCAT* cause combined oxidative phosphorylation deficiency. *Elife*. 2023 Mar 7;12:e68047. doi: 10.7554/eLife.68047. PMID: 36881526; PMCID: PMC9991045.

Kidwell CU, Casalini JR, Pradeep S, Scherer SD, Greiner D, Bayik D, Watson DC, Olson GS, Lathia JD, Johnson JS, Rutter J, Welm AL, Zangle TA, Roh-Johnson M. Transferred mitochondria accumulate reactive oxygen species, promoting proliferation. *Elife*. 2023 Mar 6;12:e85494. doi: 10.7554/eLife.85494. PMID: 36876914; PMCID: PMC10042539.

Johnson JM, Peterlin AD, Balderas E, Sustarsic EG, Maschek JA, Lang MJ, Jara-Ramos A, Panic V, Morgan JT, Villanueva CJ, Sanchez A, Rutter J, Lodhi JJ, Cox JE, Fisher-Wellman KH, Chaudhuri D, Gerhart-Hines Z, Funai K. Mitochondrial phosphatidylethanolamine modulates UCP1 to promote brown adipose thermogenesis. *Sci Adv*. 2023 Feb 24;9(8):eade7864. doi: 10.1126/sciadv.ade7864. Epub 2023 Feb 24. PMID: 36827367; PMCID: PMC9956115.

Winter JM, Fresenius HL, Cunningham CN, Wei P, Keys HR, Berg J, Bott A, Yadav T, Ryan J, Sirohi D, Tripp SR, Barta P, Agarwal N, Letai A, Sabatini DM, Wohlever ML, Rutter J. Collateral deletion of the mitochondrial AAA+ ATPase ATAD1 sensitizes cancer cells to proteasome dysfunction. *Elife*. 2022 Nov 21;11:e82860. doi: 10.7554/eLife.82860. PMID: 36409067; PMCID: PMC9815822.

Wei P, Bott AJ, Cluntun AA, Morgan JT, Cunningham CN, Schell JC, Ouyang Y, Ficarro SB, Marto JA, Danial NN, DeBerardinis RJ, Rutter J. Mitochondrial pyruvate supports lymphoma proliferation by fueling a glutamate pyruvate transaminase 2-dependent glutaminolysis pathway. *Sci Adv*. 2022 Sep 30;8(39):eabq0117. doi: 10.1126/sciadv.abq0117. Epub 2022 Sep 30. PMID: 36179030; PMCID: PMC9524954.

Shimura D, Nuebel E, Baum R, Valdez SE, Xiao S, Warren JS, Palatinus JA, Hong T, Rutter J, Shaw RM. Protective mitochondrial fission induced by stress-responsive protein GJA1-20k. *Elife*. 2021 Oct 5;10:e69207. doi: 10.7554/eLife.69207. PMID: 34608863; PMCID: PMC8492060.

Nuebel E, Morgan JT, Fogarty S, Winter JM, Lettlova S, Berg JA, Chen YC, Kidwell CU, Maschek JA, Clowers KJ, Argyriou C, Chen L, Wittig I, Cox JE, Roh-Johnson M, Braverman N, Bonkowski J, Gygi SP, Rutter J. The biochemical basis of mitochondrial dysfunction in Zellweger Spectrum Disorder. *EMBO Rep*. 2021 Oct 5;22(10):e51991. doi: 10.15252/embr.202051991. Epub 2021 Aug 5. PMID: 34351705; PMCID: PMC8490991

Ouyang Y, Bott AJ, Rutter J. Maestro of the SereNADe: SLC25A51 Orchestrates Mitochondrial NAD⁺. *Trends Biochem Sci*. 2021 May;46(5):348-350. doi: 10.1016/j.tibs.2021.02.001. Epub 2021 Feb 19. PMID: 33618948; PMCID: PMC8344040.

Cluntun AA, Badolia R, Lettlova S, Parnell KM, Shankar TS, Diakos NA, Olson KA, Taleb I, Tatum SM, Berg JA, Cunningham CN, Van Ry T, Bott AJ, Krokidi AT, Fogarty S, Skedros S, Swiatek WI, Yu X, Luo B, Merx S, Navankasattusas S, Cox JE, Ducker GS, Holland WL, McKellar SH, Rutter J, Drakos SG. The pyruvate-lactate axis modulates cardiac hypertrophy and heart failure. *Cell Metab*. 2021 Mar 2;33(3):629-648.e10. doi: 10.1016/j.cmet.2020.12.003. Epub 2020 Dec 16. PMID: 33333007; PMCID: PMC7933116.

Nowinski SM, Solmonson A, Rusin SF, Maschek JA, Bensard CL, Fogarty S, Jeong MY, Lettlova S, Berg JA, Morgan JT, Ouyang Y, Naylor BC, Paulo JA, Funai K, Cox JE, Gygi SP, Winge DR, DeBerardinis RJ, Rutter J. Mitochondrial fatty acid synthesis coordinates oxidative metabolism in mammalian mitochondria. *Elife*. 2020 Aug 17;9:e58041. doi: 10.7554/eLife.58041. PMID: 32804083; PMCID: PMC7470841.

Berg JA, Belyeu JR, Morgan JT, Ouyang Y, Bott AJ, Quinlan AR, Gertz J, Rutter J. XPRESSyourself: Enhancing, standardizing, and automating ribosome profiling computational analyses yields improved insight into data. *PLoS Comput Biol*. 2020 Jan 31;16(1):e1007625. doi: 10.1371/journal.pcbi.1007625. PMID: 32004313; PMCID: PMC7015430.

Waller TC, Berg JA, Lex A, Chapman BE, Rutter J. Compartment and hub definitions tune metabolic networks for metabolomic interpretations. *Gigascience*. 2020 Jan 1;9(1):giz137. doi: 10.1093/gigascience/giz137. PMID: 31972021; PMCID: PMC6977586.

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. Mitochondrial PE potentiates respiratory enzymes to amplify skeletal muscle aerobic capacity. *Sci Adv*. 2019 Sep 11;5(9):eaax8352. doi: 10.1126/sciadv.aax8352. PMID: 31535029; PMCID: PMC6739096.

NON PEER-REVIEWED JOURNAL ARTICLES

REVIEW ARTICLES

1. **Rutter J**, Reick M, McKnight SL (2002). Metabolism and the control of circadian rhythms. [Review]. *Annu Rev Biochem*, 71, 307-31.
2. Lindsley JE, **Rutter J** (2004). Nutrient sensing and metabolic decisions. [Review]. *Comp Biochem Physiol B Biochem Mol Biol*, 139(4), 543-59.
3. Hao HX, **Rutter J** (2008). The role of PAS kinase in regulating energy metabolism. [Review]. *IUBMB Life*, 60(4), 204-9.
4. Hao HX, **Rutter J** (2009). Revealing human disease genes through analysis of the yeast mitochondrial proteome. [Review]. *Cell Cycle*, 8(24), 4007-8.
5. Grose JH, **Rutter J** (2010). The role of PAS kinase in PASSing the glucose signal. [Review]. *Sensors (Basel)*, 10(6), 5668-82.
6. **Rutter J**, Winge DR, Schiffman JD (2010). Succinate dehydrogenase - Assembly, regulation and role in human disease. [Review]. *Mitochondrion*, 10(4), 393-401.
7. Heo JM, **Rutter J** (2011). Ubiquitin-dependent mitochondrial protein degradation. [Review]. *Int J*

Biochem Cell Biol, 43(10), 1422-6.

8. Taylor EB, **Rutter J** (2011). Mitochondrial quality control by the ubiquitin-proteasome system. [Review]. *Biochem Soc Trans*, 39(5), 1509-13.
9. Tantin D, **Rutter J** (2012). Proliferation and metabolism: it's as easy as APC. [Review]. *Cell Metab*, 15(4), 413-4.
10. Cardon CM, **Rutter J** (2012). PAS kinase: integrating nutrient sensing with nutrient partitioning. [Review]. *Semin Cell Dev Biol*, 23(6), 626-30.
11. Schell JC, **Rutter J** (2013). The long and winding road to the mitochondrial pyruvate carrier. [Review]. *Cancer Metab*, 1(1), 6.
12. Pagliarini DJ, **Rutter J** (2013). Hallmarks of a new era in mitochondrial biochemistry. [Review]. *Genes Dev*, 27(24), 2615-27.
13. **Rutter J**, Hughes AL (2015). Power(2): the power of yeast genetics applied to the powerhouse of the cell. [Review]. *Trends Endocrinol Metab*, 26(2), 59-68.
14. Van Vranken JG, Na U, Winge DR, **Rutter J** (2015). Protein-mediated assembly of succinate dehydrogenase and its cofactors. [Review]. *Crit Rev Biochem Mol Biol*, 50(2), 168-80.
15. Tanner JM, **Rutter J** (2016). You Are What You Eat... or Are You? *Dev Cell*, 36(5), 483-5
16. Olson KA, Schell JC, **Rutter J** (2016). Pyruvate and Metabolic Flexibility: Illuminating a Path Toward Selective Cancer Therapies. [Review]. *Trends Biochem Sci*, 41(3), 219-230.
17. Nielson JR, **Rutter JP** (2018). Lipid-mediated signals that regulate mitochondrial biology. [Review]. *J Biol Chem*, 293(20), 7517-7521.
18. Wei P, Dove KK, Bensard C, Schell JC, **Rutter J** (2018). The Force Is Strong with This One: Metabolism (Over)powers Stem Cell Fate. [Review]. *Trends Cell Biol*, 28(7), 551-559.
19. Nowinski SM, Van Vranken JG, Dove KK, **Rutter J** (2018). Impact of Mitochondrial Fatty Acid Synthesis on Mitochondrial Biogenesis. [Review]. *Curr Biol*, 28(20), R1212-R1219.

Cunningham CN, **Rutter J**. 20,000 picometers under the OMM: diving into the vastness of mitochondrial metabolite transport. *EMBO Rep*. 2020 May 6;21(5):e50071. doi: 10.15252/embr.202050071. Epub 2020 Apr 23. PMID: 32329174; PMCID: PMC7202207.

Funai K, Summers SA, **Rutter J**. Reign in the membrane: How common lipids govern mitochondrial function. *Curr Opin Cell Biol*. 2020 Apr;63:162-173. doi: 10.1016/j.ceb.2020.01.006. Epub 2020 Feb 24. PMID: 32106003; PMCID: PMC7484982.

Winter JM, Yadav T, **Rutter J**. Stressed to death: Mitochondrial stress responses connect respiration and apoptosis in cancer. *Mol Cell*. 2022 Sep 15;82(18):3321-3332. doi: 10.1016/j.molcel.2022.07.012. Epub 2022 Aug 11. PMID: 35961309; PMCID: PMC9481690.

OTHER (Commentary/Letters/Editorials/Case Reports/Video/Film)

Patents

1. **Rutter J** (2002). Isolation, Identification and Characterization of PAS kinase. U.S. Patent No. 6,319,679. Washington, D.C.:U.S. Patent and Trademark Office.
2. **Rutter J** (2006). Pas kinase regulates energy homeostasis. U.S. Patent No. (Provisional Patent). Washington, D.C.:U.S. Patent and Trademark Office.
3. **Rutter J** (2009). Sdh5 in diagnostic applications in paraganglioma and related tumors (Provisional Patent).
4. **Rutter J** (2012). Compositions and Methods for Modulating Mitochondrial Pyruvate Carrier Activity (Provisional Patent).

ORAL PRESENTATIONS

Keynote/Plenary Lectures

National

2016 Plenary Lecture, American Society for Biochemistry and Molecular Biology Annual Meeting, San Diego, CA

Local/Regional

2013 Keynote Address, National MD/PhD Conference, Keystone, CO

Meeting Presentations (Not Published Abstracts and Not Unpublished Posters)

International

2002 Amersham Biosciences, Piscataway, NJ
2002 Yeast Genetics and Molecular Biology Meeting, Platform, University of Wisconsin, Madison, WI
2004 Gordon Conference: Second Messengers and Signal Transduction. Meriden, NH
2005 Stress Signals and Cellular Responses Meeting, Halle, Germany
2005 ICAM: Signal Transduction and Protein Phosphorylation, University of California, San Diego, CA
2007 FASEB Summer Research Conference- AMPK, Snowmass, CO
2007 ASBMB Meeting, Washington, DC
2008 Janelia Farms Conference: New Frontiers in Mitochondrial Science: Integration into Cell Signaling, Ashburn, VA
2008 International Meeting on Yeast Apoptosis, Leuven, Belgium
2008 American Diabetes Association-Scientific Sessions, San Francisco, CA
2008 FASEB Summer Research Conference-Nutrient Control, Tucson, AZ
2008 International Conference on Yeast, Kiev, Ukraine (declined)
2008 Nutrient Sensing, Banbury Center Conference, Cold Spring Harbor, NY
2008 Congress of International Drug Discovery Science and Technology, Beijing, China (declined)
2009 Pennington Symposium: Circadian Biology, Obesity and Metabolism, Baton Rouge, LA
2009 American Association of Cancer Research Meeting on Cancer Metabolism, La Jolla, CA
2009 ASBMB Conference on Kinase Signal Transduction, Snowmass, CO
2009 ASBMB Conference on Mitochondrial Assembly, Carefree, AZ
2010 American Association of Cancer Research Annual Meeting, Washington DC
2010 Society of Toxicology Annual Meeting, Salt Lake City, UT
2011 FASEB Conference-Nutrient Regulation of Metabolism, Steamboat Springs, CO
2011 FASEB Conference-Mitochondrial Assembly, Steamboat Springs, CO
2011 International Meeting on Yeast Apoptosis, Canterbury, England
2011 Keystone Symposium-Lipid Biology and Lipotoxicity, Killarney, Ireland
2011 FASEB Conference-Protein Kinases and Protein Phosphorylation, Snowmass, CO
2011 Mitochondrial Dynamics: from Mechanism to Disease, Sardinia, Italy
2012 Chicago Symposium on Cellular Signaling, Chicago, IL
2012 International Meeting on Yeast Apoptosis, Rome, Italy
2012 Keystone Symposium, Cancer and Metabolism, Banff, Canada
2012 ASBMB National Meeting – Signaling and Metabolism Session, San Diego, CA
2013 Miami Winter Symposium, “The molecular basis of metabolism and nutrition”, Miami, FL
2013 International Symposium on Dynamics of Mitochondria, Okinawa, Japan
2013 Bollum Symposium “Metabolomics and Metabolic Discovery”, University of Minnesota

2013 American Diabetes Association Scientific Sessions, Chicago, IL
 2013 FASEB Conference, Protein Kinases and Protein Phosphorylation, Niagara Falls, NY
 2014 Keystone Symposium, Mitochondrial Dynamics and Physiology, Santa Fe, NM
 2014 American Diabetes Association Scientific Session, San Francisco, CA
 2014 FASEB Conference, Mitochondrial Biogenesis in Health Disease and Aging, Palm Beach, FL
 2014 "Mitochondria, Metabolomics and Disease" Symposium, New York Academy of Sciences, NY
 2015 NHLBI Mitochondrial Biology Symposium, Bethesda, MD
 2015 "Multifaceted Mitochondria" Cell Symposium, Chicago, IL
 2015 FASEB Conference, FASEB Protein Kinases and Protein Phosphorylation, Itaska, IL
 2015 CSHL Meeting, Metabolic Signaling & Disease: From Cell to Organism, CSHL, NY
 2015 International Union of Biochemistry and Molecular Biology Meeting, Foz de Iguacu, Brazil
 2015 Banbury Conference, Mitochondria and Cancer, Cold Spring Harbor, NY
 2015 FASEB Conference, Mitochondrial Biogenesis and Dynamics, West Palm Beach, FL
 2015 Banbury Conference, Tumor Metabolism, Cold Spring Harbor, NY
 2016 McGill Signaling Meeting, Barbados
 2016 Translational Diabetes Symposium, University of Toronto, Toronto, Canada
 2016 Ipsen Cancer Biology Meeting, Atacama, Chile
 2016 NHLBI Mitochondrial Biology Symposium/Endoplasmic Reticulum-Mitochondrial Signaling in Health and Disease Symposium, Bethesda MD
 2016 American Diabetes Association Scientific Sessions, New Orleans, LA
 2016 European Bioenergetics Conference, Riva del Garda, Italy
 2016 Cold Spring Harbor PTEN/mTOR Conference, Cold Spring Harbor, NY
 2016 Mitochondrial Center, University of Pittsburgh, Pittsburgh, PA
 2016 Metabolism and Pancreatic Cancer Symposium, UCSF, San Francisco, CA
 2017 Keystone Symposium, Mitochondrial Communication, Taos, NM
 2017 Keystone Symposium, Tumor Metabolism, Whistler, Canada
 2017 Symposium of Protein Signaling and Sorting, Freiburg, Germany
 2017 Mosbach Colloquium - Cell Organelles: Origin, Dynamics and Communication, Mosbach, Germany
 2017 EMBL Symposium, Metabolism in Space and Time, Heidelberg, Germany
 2017 Cold Spring Harbor Metabolism Conference, Cold Spring Harbor, NY
 2017 New York Academy of Sciences Symposium, Targeting Cancer Metabolism, New York, NY
 2017 Gordon Conference, Bioenergetics, Proctor Academy, Andover, NH
 2017 American Diabetes Association Scientific Sessions, San Diego, CA
 2017 FASEB Conference, Glucose Transport, Snowmass, CO
 2017 Gordon Conference, Metals in Biology, Mount Snow Resort, VT
 2017 Salk Cancer Models and Mechanisms Conference, Salk Institute, San Diego, CA
 2017 American Physiological Society - Bioenergetics Conference, San Diego, CA
 2017 Cold Spring Harbor-China, Mitochondrial Biology, Suzhou, China
 2017 - 2018 Osaka Mitochondrial Meeting, Osaka, Japan
 2018 Keystone Symposium, Tumor Metabolism, Snowbird, UT
 2018 Weizmann Mitochondrial Symposium, Rehovot, Israel

2018 Keystone Symposium, Mitochondrial Biology/Autophagy, Kyoto, Japan
 2018 Steenbock Iron-Sulfur Symposium, Madison, WI
 2018 United Mitochondrial Disease Foundation-Mitochondrial Medicine Symposium, Nashville, TN
 2018 Gordon Conference, Mitochondrial and Chloroplasts, Tuscany, Italy
 2018 FASEB Nutrient Sensing and Metabolic Signaling, Snowmass, CO
 2018 Cold Spring Harbor Laboratory, Cancer Models and Mechanisms, NY
 2018 Leuvres Modeles et Outils, Zurich, Switzerland
 2018 Morgridge Metabolism Meeting, Madison, WI
 2018 AACR Cancer Metabolism Meeting, Brooklyn, NY
 2018 Cold Spring Harbor Laboratory, Mitochondria **Evolution**, NY
 2018 AussieMIT, Melbourne, Australia
 2019 Biotechnology Showcase, San Francisco, CA
 2019 Deuel Lipids Conference, Dana Point, CA
 2019 Gordon Conference on Mitochondria, Ventura, CA
 2019 American Association of Cancer Research Annual Meeting, Atlanta, GA
 2019 Nature Metabolism Conference, Xiamen, China
 2019 Cold Spring Harbor Metabolism Conference, CSHL, NY
 2019 Metabolism in Health and Disease Fusion Conference, Puerto Vallarta, Mexico
 2019 Korean Society for Biochemistry and Molecular Biology, Jeju Island, Korea
 2019 FASEB Glucose Metabolism Conference, Palm Springs, CA
 2019 Cologne Mitochondrial Symposium, Cologne, Germany
 2020 Keystone Symposium, Diabetes: Glucose Control and Beyond/Islet Biology: From Gene to Cell to Micro-Organ, Santa Fe, NM
 2020 Deuel Lipids Conference, Coronado Island, CA
 2020 Virtual, American Heart Association Scientific Sessions
 2021 Virtual, Keystone Symposium: Metabolic Decisions in Development and Disease
 2021 Virtual, United Mitochondrial Disease Foundation Mitochondrial Medicine Symposium
 2022 Deuel Lipids Conference, Monterey, CA
 2022 Cell Symposium: "Metabolites in Signaling and Disease", Lisbon, Portugal
 2022 Fusion Conference: Metabolism in Health and Disease Conference", Cancun, MX
 2022 Keynote Speaker, New Directions in Biology and Disease of Skeletal Muscle Conference, Fort Lauderdale, FL
 2022 European Bioenergetics Conference, Provence, France
 2022 FASEB Glucose Metabolism Scientific Research Conference, Nova Scotia, Canada
 2022 EMBO/FEBS Mitochondria in life, death and disease meeting, Montenegro
 2022 Keystone Tumor Metabolism Symposium, Keystone, CO
 2022 4-Dimensional Cellular Physiology Symposium, Janelia Farms, VA
 2022 MITOCHONDRIA PAST & PRESENT: Evolution, Proteostasis, Dynamics and Disease Symposium, Ein Gedi, Israel
 2022 Cell Symposium on Multifaceted Mitochondria, Sevilla, Spain
 2022 Keystone Bioenergetics in Health and Diseases Symposium, Keystone, CO
 2023 Chan Zuckerberg Institute Workshop - Metabolism Across Scales, Mountain View, CA
 2023 Mitochondria in Health and Disease Gordon Research Conference, Tuscany, Italy
 2023 Keystone Symposium: Hypoxia: From Basic Mechanisms to Emerging Therapies, Killarney, Ireland
 2023 Keystone Symposium: Type 2 Diabetes: Understanding its Early Drivers and the Road to Therapeutics, Palm Springs, CA

Invited/Visiting Professor Presentations

Local/Regional

1999	Biochemistry Student/Postdoctoral Colloquium, University of Texas Southwestern, Dallas, TX
2002	The Center for Diabetes Research, University of Texas Southwestern, Dallas, TX
2002	Nominata Lecture, University of Texas Southwestern, Dallas, TX
2003	Department of Biochemistry, University of Utah, Salt Lake City, UT
2020	Huntsman Cancer Institute/Nature Transdisciplinary Cancer Symposium, Salt Lake City, UT
2022	Rocky Mountain Membrane Trafficking Meeting, Boulder, CO

National

2002	Department of Pharmacology, University of Virginia, Charlottesville, VA
2003	Brigham Young University, Provo, UT
2004	Biochemistry and Molecular Biology Departmental Seminar, Indiana University School of Medicine, Indianapolis, IN
2005	Genetics Department, Washington University in St. Louis, MO
2006	University of Minnesota, Minneapolis, MN
2007	Department of Chemistry and Biochemistry, Utah State University, Logan, UT
2007	Brigham Young University, Provo, UT
2008	University of Texas-Southwestern Medical Center, Department of Biochemistry, Dallas, TX
2008	University of Dundee, UK
2008	Jaime Kim Memorial Lecture, Section of Endocrinology, University of Chicago, Chicago, IL
2009	Harvard University, Department of Genetics and Complex Diseases, Boston, MA
2009	Scripps Research Institute, La Jolla, CA
2009	Department of Physiology, University of Michigan, Ann Arbor, MI
2009	Department of Metabolism and Aging, Scripps Research Institute-Florida, Jupiter, FL
2009	Boston University, Boston, MA
2009	Brigham Young University, Department of Microbiology and Molecular Biology, Provo, UT
2010	Virginia Commonwealth University, Richmond, VA
2010	Gladstone Institute and Cardiovascular Research Institute, University of California, San Francisco, CA
2010	Stedman Nutrition and Metabolism Center, Duke University, Chapel Hill, NC
2010	Memorial Sloan Kettering Cancer Center, New York, NY
2010	Life Sciences Colloquium Lecture, Weizman Institute, Rehovot, Israel
2010	The Technion, Haifa, Israel
2011	Cardiovascular Research Institute, University of California, San Francisco, CA
2011	Metabolism Division, Duke-National University of Singapore, Singapore
2011	Department of Developmental Biology, University of Texas Southwestern Medical Center, Dallas, TX
2012	Mass General Hospital, Boston, MA
2012	Department of Biochemistry, University of Texas Southwestern Medical Center, Dallas, TX
2012	Department of Pharmacology, University of California, San Diego, CA

2012 Eppley Cancer Center, University of Nebraska Medical Center, Omaha, NE
 2012 Molecular and Cellular Biology, Baylor College of Medicine, Houston, TX
 2012 Department of Biochemistry, University of Saskatchewan, Saskatoon, Canada
 2012 Committee on Molecular Metabolism and Nutrition, University of Chicago, IL
 2012 Department of Biochemistry and Biophysics, Texas A&M University, College Station, TX
 2013 Cardiovascular Research and Training Institute, University of Utah
 2013 Hematology Faculty Conference, University of Utah, Salt Lake City, UT
 2013 Investigator Competition, Semifinalists Symposium, HHMI, Janelia Farms, VA
 2013 Sanford-Burnham Research Institution, Lake Nona, FL
 2013 Department of Biology, MIT, Boston, MA
 2013 Department of Cell Biology, Johns Hopkins University, Baltimore, MD
 2013 Department of Biochemistry, University of Wisconsin, Madison, WI
 2013 Department of Biochemistry, University of Colorado Health Sciences Center, Denver, CO
 2014 NIAAA/NIH, Bethesda, MD
 2014 Doctoral College "Metabolic and Cardiovascular Disease", University of Graz, Austria
 2014 Department of Biochemistry, University of Washington
 2015 Department of Genetics, Oregon Health Sciences University
 2015 Department of Pediatrics, Oregon Health Sciences University
 2015 Guest Lecture, Agios Pharmaceuticals, Cambridge, MA
 2015 Lecture, Takeda Advisory Board Meeting on Mitochondria
 2015 Blavatnik Science Symposium, New York, NY
 2015 University of Cologne, Cologne, Germany
 2015 Mitochondria and Aging Symposium, Penn State University, PA
 2015 Kavli Salon-Neurodegeneration, MIT, Cambridge, MA
 2015 Guest Lecture, Cell Signaling Technologies, MA
 2015 Department of Pharmacology, Yale University, New Haven, CT
 2015 Mitochondria Conference, University of Copenhagen, Copenhagen, Denmark
 2016 Department of Cell Biology, Harvard Medical School, Boston, MA
 2016 Salk Institute, La Jolla, CA
 2016 Indiana University School of Medicine, Indianapolis, IN
 2016 Division of Endocrinology, Columbia University School of Medicine, New York, NY
 2016 Calico Laboratories, South San Francisco, CA
 2016 University of Paris, Paris, France
 2016 Inflammation/Immunity/Infection Symposium, Park City, UT
 2016 Department of Biochemistry, Medical College of Wisconsin, Milwaukee, WI
 2016 Molecular Biology Institute, UCLA, Los Angeles, CA
 2016 Life Science Colloquium, Weizmann Institute, Rehovot, Israel
 2017 Department of Biochemistry, U. Texas Southwestern Medical Center, Dallas, TX
 2017 University of California-Davis, Davis, CA
 2017 Metabolism Interest Group, University of Massachusetts, Worcester, MA
 2017 Rockefeller University, New York, NY
 2017 Agios, Cambridge, MA
 2017 Department of Biochemistry, University of Illinois, Urbana-Champaign, IL
 2017 Merck Research Labs, South San Francisco, CA
 2017 Sanford Burnham Research Institute, La Jolla, CA
 2017 Penn Diabetes Research Center, Philadelphia, PA

2018 Department of Nutrition, U. California at Berkeley, CA
 2018 Molecular Physiology Institute, Duke University, NC
 2018 Department of Pharmacology, Duke University, NC
 2018 Department of Pediatrics, Memorial-Sloan Kettering Cancer Center, NY
 2018 Center for Molecular Medicine and genetics, Wayne State University, Detroit, MI
 2018 Department of Biology, University of Padua, Italy
 2018 BIOCEV Research Center and Czech Academy of Sciences, Prague, Czech Republic
 2018 Department of Biochemistry, University of Geneva, Switzerland
 2018 ETH Zurich-Institute of Biochemistry, Zurich, Switzerland
 2018 Diabetes & Metabolism Research Institute, City of Hope, Duarte, CA
 2018 Department of Biochemistry, LSU Health Sciences Center, New Orleans, LA
 2018 Danny Thomas Lecture, St. Jude Children's Hospital, Memphis, TN
 2019 Calico Laboratories, South San Francisco, CA
 2019 RiverVest Ventures Annual Limited Partners Meeting, St. Louis, MO
 2019 Yonsei University, Seoul, Korea
 2019 KAIST, Daejeon, Korea
 2019 Cardiovascular Medicine Group, Novartis Institute for Biomedical Research, Cambridge, MA
 2019 Cardiovascular Medicine and Metabolism Division, Pfizer, Cambridge, MA
 2019 Human Biology Division, Fred Hutch Cancer Research Center, Seattle, WA
 2019 Pathways in Science Lecture, Department of Biochemistry Annual Retreat, Park City, UT
 2019 Experimental Pathology Department, NYU Langone School of Medicine, New York, NY
 2019 Guest Lecturer, University of Cincinnati Cancer Center Annual Retreat
 2019 Molecular and Cellular Biology Department, University of California at Berkeley
 2019 Elkin Lecture, Emory University Winship Cancer Center, Atlanta, GA
 2020 Department of Pharmacology and Toxicology, University of Arizona, Tucson, AZ
 2020 Biochemistry and Molecular Genetics (BMG) Department, Northwestern University, Chicago, IL
 2020 Howard Hughes Medical Institute Investigator Meeting, Washington DC
 2020 Virtual, Kroc Foundation Lecture, University of Chicago
 2021 Virtual, Protein Folding Diseases Symposium, University of Michigan
 2021 Virtual, Department of Genetics, Cell Biology and Anatomy, University of Nebraska Medical Center
 2021 Virtual, Division of Molecular Metabolism, Karolinska Institute
 2021 Virtual, Department of Biochemistry, Weill Cornell Medicine, New York, NY
 2021 Virtual, T32-funded Cancer Biology & Therapeutics training program, UC-Irvine
 2021 Keynote Speaker, Virtual, Henry Ford Health System Research Symposium
 2021 Virtual, Department of Pharmacology, UC-San Diego
 2021 Virtual, Institute of Biochemistry Goethe University Frankfurt, Germany
 2021 Virtual, Distinguished Lectures in Cancer Research Seminar Series, Wistar Institute
 2021 Virtual, Oncology/Inflammation Seminar Series, Amgen
 2021 Virtual, Janelia Workshop on Nutrition and Metabolism Across Scales, HHMI
 2021 Virtual, MitoTalks Seminar Series
 2021 Virtual, Life Sciences Switzerland Prestige Webinar
 2021 Virtual, McArdle Laboratory for Cancer Research, University of Wisconsin
 2021 Virtual, Molecular Medicine Seminar Series at Scripps Research Institute
 2021 Virtual, Department of Physiology, U. Texas Southwestern Medical Institute

2021	Virtual, Seoul National University
2022	Virtual, Department of Cancer Biology, Dana Farber Cancer Institute
2022	Virtual, Howard Hughes Medical Institute Investigator Meeting
2022	Virtual, Endocrine Grand Rounds Seminar, Beth Israel Deaconess Medical Center
2022	Vanderbilt Stem Cell Center Symposium, Vanderbilt University Medical Center
2022	Virtual, Collaborative Research Center Seminar Series, U of Freiburg, Germany
2022	Virtual, Metabolism Downunder Seminar Series
2022	Virtual, Metabolism, Diabetes and Obesity Seminar Series, Monash University, Melbourne, AUS
2022	Virtual, SCCC Distinguished Lecture Series, U. Texas Southwestern Center
2022	Stanford Cancer Biology Program Seminar Series, Stanford, CA
2023	HHMI Janelia Farms Research Campus, Ashburn, VA
2023	Department of Genetics and Genomics, Texas A&M University
2023	Department of Cell Biology, U. Texas Southwestern Medical Center
2023	Regulatory Networks in Health and Disease Seminar Series, Duke U.
2023	Duke Metabolic Physiology Institute Seminar Series, Duke U.
2023	Duke-National University of Singapore Signature/CVMD SRP Seminar Series
2023	Penn Joint Seminar Institute for Diabetes, Obesity and Metabolism (IDOM) and the
2023	Penn Cardiovascular Institute (CVI), Philadelphia, PA

Outreach Presentations

2006	Speaker, American Diabetes Association, American Diabetes Association.- Diabetes Expo
2007	Speaker, American Diabetes Association, Father of the Year Awards Banquet
2008	Speaker, American Diabetes Association, Father of the Year Awards Banquet
2009	Speaker, American Diabetes Association, Tour de Cure Opening Program
2019	Presentations on Mitochondria, iBiology