

## **Nolan J. Hoffman, Ph.D.**

Postdoctoral Research Fellow  
Exercise and Nutrition Research Program | Mary MacKillop Institute for Health Research  
Australian Catholic University  
Level 5, 215 Spring Street  
Melbourne, Victoria 3000 Australia

**E-mail:** Nolan.Hoffman@acu.edu.au

**Phone:** +61 3 9230 8277

## **EDUCATION**

---

**Indiana University, Indianapolis, Indiana USA** August 2007-February 2012  
**Ph.D.**, Cellular and Integrative Physiology, Diabetes and Obesity Minor  
Indiana University School of Medicine Biomedical Gateway Ph.D. Program

**Indiana University Kelley School of Business** October 2009-May 2011  
**Graduate Certificate**, Business of Life Sciences  
Center for the Business of Life Sciences

**Butler University, Indianapolis, Indiana USA** August 2003-May 2007  
**B.Sc.**, Biology major, Chemistry minor  
Honours in Biology

**University of Tasmania, Hobart, Tasmania Australia** February 2006-July 2006  
International Exchange Student  
Department of Zoology, International Exchange Program

## **PUBLICATIONS**

---

### **MANUSCRIPTS** (\*authors contributed equally; #corresponding author)

Nelson ME\*, Parker BL\*, Burchfield J\*, **Hoffman NJ\***, Needham EJ, Cooke KC, Naim T, Sylow L, Ling NXY, Francis D, Norris DM, Chaudhuri R, Oakhill JS, Richter EA, Lynch GS, Stöckli J, James DE (2019) Phosphoproteomics reveals conserved nodes and regulation of store-operated calcium entry by AMPK. *EMBO Journal* (accepted 15 June 2019).

Janzen NR, Whitfield J and **Hoffman NJ#** (2018) Interactive roles for AMPK and glycogen from cellular energy sensing to exercise metabolism. *International Journal of Molecular Sciences* 19(11): 3344.

Leckey JJ, **Hoffman NJ**, Parr EB, Devlin BL, Trewin AJ, Stepto NK, Morton JP, Burke LM, Hawley JA (2018) High dietary fat intake increases fat oxidation and reduces skeletal muscle mitochondrial respiration in trained humans. *FASEB Journal* 32(6): 2979-2991.

Burchfield JG\*, Kebede MA\*, Meoli CC\*, Stöckli J, Whitworth PT, Wright AL, **Hoffman NJ**, Minard AY, Ma X, Krycer JR, Nelson ME, Tan SX, Yau B, Thomas KC, Wee NKY, Khor EC, Enriquez RF, Vissel B, Biden TJ, Baldock PA, Hoehn KL, Cantley J, Cooney GJ, James DE, Fazakerley DJ (2018) High dietary fat and sucrose results in an extensive and time-dependent deterioration in health of multiple physiological systems in mice. *Journal of Biological Chemistry* 293(15): 5731-5745.

Fazakerley DJ, Chaudhuri R, Yang P, Maghzal GJ, Thomas KC, Krycer JR, Humphrey SJ, Parker BL, Fisher-Wellman KH, Meoli CC, **Hoffman NJ**, Diskin C, Burchfield JG, Cowley MJ, Kaplan WH, Modrusan Z, Kolumam G, Yang JY, Chen DL, Samocha-Bonet D, Greenfield JR, Hoehn KL, Stocker R\*, James DE\* (2018) Mitochondrial CoQ deficiency is a common driver of mitochondrial oxidants and insulin resistance. *eLife* 7: e32111.

**MANUSCRIPTS** (*continued*)

Stöckli J\*, Fisher-Wellman KH\*, Chaudhuri R\*, Zeng XY, Fazakerley DJ, Meoli CC, Thomas KC, **Hoffman NJ**, Mangiafico SP, Xirouchaki CE, Yang CH, Ilkayeva O, Wong K, Cooney GJ, Andrikopoulos S, Muoio DM, James DE (2017) Metabolomic analysis of insulin resistance across different mouse strains and diets. *Journal of Biological Chemistry* 292(47): 19135-19145.

*-Selected for special 2018 virtual issue of ASBMB journal content on "Omics of lipids, glycans and polar metabolites" hosted by the Journal of Biological Chemistry*

**Hoffman NJ**<sup>#</sup> (2017) Omics and exercise: global approaches for mapping exercise biological networks. *Cold Spring Harbor Perspectives in Medicine* 7(10): 1-16.

Lee-Young RS, **Hoffman NJ**, Murphy KT, Henstridge DC, Samocha-Bonet D, Siebel AL, Iliades P, Zivanovic B, Hong YH, Colgan TD, Kraakman MJ, Bruce CR, Gregorevic P, McConell GK, Lynch GS, Drummond GR, Kingwell BA, Greenfield JR, Febbraio MA (2016) Glucose-6-phosphate dehydrogenase contributes to the regulation of glucose uptake in skeletal muscle. *Molecular Metabolism* 5(11): 1083-1091.

Kleinert M, Parker BL, Chaudhuri R, Fazakerley DJ, Serup A, Thomas KC, Krycer JR, Sylow L, Fritzen AM, **Hoffman NJ**, Jeppesen J, Schjerling P, Ruegg MA, Kiens B, James DE, Richter EA (2016) mTORC2 and AMPK differentially regulate muscle triglyceride content via Perlipin 3. *Molecular Metabolism* 5(8): 646-655.

**Hoffman NJ**\*, Parker BL\*, Chaudhuri R, Fisher-Wellman KH, Kleinert M, Humphrey SJ, Yang P, Holliday M, Trefely S, Fazakerley DJ, Stöckli J, Burchfield JG, Jensen TE, Jothi R, Kiens B, Wojtaszewski JF, Richter EA, James DE (2015) Global phosphoproteomic analysis of human skeletal muscle reveals a network of exercise-regulated kinases and AMPK substrates. *Cell Metabolism* 22(5): 922-935.

Rogers S, McCloy RA, Parker BL, Chaudhuri R, Gayevskiy V, **Hoffman NJ**, Daly RJ, James DE, Watkins DN, Burgess A (2015) Dataset from the global phosphoproteomic mapping of early mitotic exit in human cells. *Data in Brief* 5: 45-52.

Chaudhuri R\*, Sadrieh A\*, **Hoffman NJ**, Parker BL, Humphrey SJ, Stöckli J, Hill A, James DE, Yang JY (2015) PhosphOrtholog: A web-based tool for cross-species mapping of orthologous protein post-translational modifications. *BMC Genomics* 16: 617.

McCloy RA, Parker BL, Rogers S, Chaudhuri R, Gayevskiy V, **Hoffman NJ**, Ali N, Watkins DN, Daly R, James DE, Lorca T, Castro A, Burgess A (2015) Global phosphoproteomic mapping of early mitotic exit in human cells identifies novel substrate dephosphorylation motifs. *Molecular & Cellular Proteomics* 14(8): 2194-2212.

Stöckli J, Meoli CC, **Hoffman NJ**, Fazakerley DJ, Pant H, Cleasby ME, Ma X, Kleinert M, Brandon AE, Lopez JA, Cooney GJ, James DE (2015) The RabGAP TBC1D1 plays a central role in exercise-regulated glucose metabolism in skeletal muscle. *Diabetes* 64(6): 1914-1922.

Parker BL, Sheperd NE, Trefely S, **Hoffman NJ**, White MY, Engholm-Keller K, Hambly BD, Larsen MR, James DE, Cordwell SJ (2014) Structural basis for phosphorylation and lysine acetylation crosstalk in a kinase motif associated with myocardial ischemia and cardioprotection. *Journal of Biological Chemistry* 289(37): 25890-25906.

*-Selected as 2014 Best of the Year by the JBC Genomics and Proteomics Affinity Group*

## MANUSCRIPTS (*continued*)

Mokbel N, **Hoffman NJ**, Girgis CM, Small L, Turner N, Daly RJ, Cooney GJ, Holt LJ (2014) Grb10 deletion enhances muscle cell proliferation, differentiation and GLUT4 plasma membrane translocation. *Journal of Cellular Physiology* 229(11): 1753-1764.

**Hoffman NJ**, Penque BA, Habegger KM, Sealls W, Tackett L, Elmendorf JS (2014) Chromium enhances insulin responsiveness via AMPK. *Journal of Nutritional Biochemistry* 25(5): 565-572.

Frangioudakis G, Diakanastasis B, Liao BM, Saville JT, **Hoffman NJ**, Mitchell TW, Schmitz-Peiffer C (2013) Ceramide accumulation in L6 skeletal muscle cells due to increased activity of ceramide synthase isoforms has opposing effects on insulin action to those caused by palmitate treatment. *Diabetologia* 56(12): 2697-2701.

Habegger KM\*, **Hoffman NJ\***, Ridenour CM, Brozinick JT, Elmendorf JS (2012) AMPK enhances insulin-stimulated GLUT4 regulation via lowering membrane cholesterol. *Endocrinology* 153(5): 2130-2141.

**Hoffman NJ** and Elmendorf JS (2011) Signaling, cytoskeletal and membrane mechanisms regulating GLUT4 exocytosis. *Trends in Endocrinology and Metabolism* 22(3): 110-116.

## BOOK CHAPTERS

**Hoffman NJ**. Omics and exercise: global approaches for mapping exercise biological networks. *The Biology of Exercise*. Cold Spring Harbor Laboratory Press (2017). ISBN: 978-1-621821-65-6.

Hurst SE, **Hoffman NJ**, Elmendorf JS, Dhar MS. Transient Silencing of a Type IV P-Type ATPase, Atp10c, Results in Decreased GLUT4 Translocation and Altered Signaling of MAPK and PI3K Pathways. *Obesity Epidemic*. iConcept Press (2014). ISBN: 978-14775549-6-8.

## FELLOWSHIP, GRANT AND INDUSTRY RESEARCH FUNDING

Australian Catholic University Research Funding  
Early Career Researcher Grant  
**Hoffman NJ (CI)**  
“How AMPK-glycogen interactions regulate metabolism and skeletal muscle physiology”  
(Funding amount: A\$50,000) January 2017-December 2018

Diabetes Australia Research Trust, General Grant  
James DE (CI), **Hoffman NJ (AI)**, Chaudhuri R (AI)  
“Probing the exercise biochemistry landscape for new therapeutic options for treating diabetes”  
(Funding amount: A\$60,000) January 2015-December 2015

Industrial Partnership Research Agreement  
Collaborative Phosphoproteomics Research Project  
The University of Sydney, Eli Lilly and Company  
James DE (CI), **Hoffman NJ (AI)**  
(Funding amount: A\$67,500) September 2014-February 2016

Indiana University Center for Diabetes Research  
Diabetes and Obesity Research Training Program: T32-DK064466  
(Funding amount: US\$25,000) July 2010-July 2011

## FELLOWSHIP, GRANT AND INDUSTRY FUNDING (*continued*)

Indiana University Center for Diabetes Research July 2008-July 2010  
Diabetes and Obesity Research Training Program: DeVault Diabetes Fellowship  
(Funding amount: US\$50,000)

## AWARDS

---

- Mary MacKillop Institute Postdoctoral Conference Support Travel Grant 2017
- 3<sup>rd</sup> Place Presentation: Mary MacKillop Institute Scientific Research Symposium 2017
- Mary MacKillop Institute Postdoctoral Conference Support Travel Grant 2016
- Australian Physiological Society Postdoctoral Research Publication Prize 2015
- Best Poster Presentation: 2<sup>nd</sup> Annual Garvan Institute Postdoctoral Symposium 2013
- Named Chancellor's Scholar\* for the IUPUI Graduate School Doctoral Program 2012  
(\*Selected as the top graduate student based on research and service contribution)
- Co-3<sup>rd</sup> Place Presentation: 2011 Sigma Xi Biomedical Research Competition 2011
- IUPUI Graduate and Professional Student Government Educational Enhancement Grant 2011
- 1<sup>st</sup> Annual Indiana Physiological Society Meeting Student Abstract Award 2011
- IUPUI Center for Membrane Biosciences Student Travel Award 2011
- 2<sup>nd</sup> Place Presentation: 2010 Sigma Xi Biomedical Research Competition 2010
- 1<sup>st</sup> Place Presentation: Center for the Business of Life Sciences Competition "Global Events and Trends Impacting the Life Sciences Industry" 2010
- Butler University Biology Departmental Honors 2003-2007
- Hendricks Regional Health Scholarship 2003-2007
- Butler University College of Liberal Arts and Sciences Scholarship 2003-2007

## RESEARCH TRAINING

---

Mary MacKillop Institute for Health Research February 2016-present  
Melbourne, VIC Australia  
Postdoctoral Research Fellow, Exercise and Nutrition Research Program  
Mentor: John A. Hawley, Ph.D. (Professor)

St Vincent's Institute of Medical Research February 2016-present  
Melbourne, VIC Australia  
Visiting Postdoctoral Scientist  
Mentor: Bruce E. Kemp, Ph.D. (Professor)

University of Sydney, School of Molecular Bioscience September 2014-February 2016  
Sydney, NSW Australia  
Postdoctoral Research Associate, Charles Perkins Centre, Metabolic Systems Biology  
Mentor: David E. James, Ph.D. FAA (Professor)

Garvan Institute of Medical Research March 2012-September 2014  
Sydney, NSW Australia  
Research Officer, Diabetes and Metabolism Division  
Mentor: David E. James, Ph.D. FAA (Professor)

Indiana University School of Medicine May 2008-February 2012  
Indianapolis, Indiana USA  
Department of Cellular and Integrative Physiology  
Ph.D. Mentor: Jeffrey S. Elmendorf, Ph.D. (Associate Professor)

## RESEARCH TRAINING (*continued*)

University of Tasmania, Department of Zoology  
Hobart, Tasmania Australia February 2006-July 2006

Butler University, Biology Department  
Indianapolis, Indiana USA January 2005-December 2005  
Undergraduate Research Mentor: Stephen Perrill, Ph.D. (Professor)

## PROFESSIONAL AFFILIATIONS

---

- Australian and New Zealand Obesity Society, Full Member 2018-present
- Australian Physiological Society, Full Member 2014-present
- American College of Sports Medicine, Professional-in-training Member 2013-present
- American Association for the Advancement of Science, Postdoc Member 2013-present
- American Society for Cell Biology, Postdoc Member 2013-present
- Australian Diabetes Society, Specialist Member 2012-present
- American Association for the Advancement of Science, Student Member 2010-2012
- American Society for Cell Biology, Student Member 2010-2012
- Indiana University Kelley School of Business 2009-2011  
Center for the Business of Life Sciences, Graduate Student Associate
- American Physiological Society, Student Member 2008-2013

## STUDENT SUPERVISION

---

Co-supervisor, Australian Catholic Univ. Ph.D. student May 2019-present  
Mehdi Belhaj, Mary MacKillop Institute for Health Research

Co-supervisor, Australian Catholic Univ. Ph.D. student May 2018-present  
Bill Tachtsis, Mary MacKillop Institute for Health Research

Supervisor, Australian Catholic Univ. visiting Master's student March-July 2018  
Mehdi Belhaj, Université Catholique de Louvain, School of Biomedical Sciences

Assistant Supervisor, Australian Catholic Univ. Ph.D. student Feb. 2018-present  
Ashley Ovens, Mary MacKillop Institute for Health Research and St Vincent's Institute

Co-supervisor, Australian Catholic Univ. Ph.D. student July 2017-present  
Natalie Janzen, Mary MacKillop Institute for Health Research

Assistant Supervisor, Australian Catholic Univ. Ph.D. student Feb. 2016-Sept. 2017  
Jill Leckey, Mary MacKillop Institute for Health Research  
Ph.D. Completion Date: 30 September 2017

Co-supervisor, Talented Student Program undergraduate student March-July 2015  
Joel Raymond, The University of Sydney

Supervisor, Garvan Institute undergraduate work experience student May-June 2014  
Anna Groen, University of Western Sydney, Food and Nutrition Science

Co-supervisor, Garvan Institute visiting Ph.D. student Sept. 2013-Jan. 2014  
Maximilian Kleinert, University of Copenhagen, Dept. of Exercise and Sport Sciences

## **TEACHING EXPERIENCE**

---

- Lecturer: EXSC242 Exercise Physiology: Adaptation to Exercise and the Environment  
“Molecular biology of exercise” May 2019  
“Molecular bases of adaptation for strength and conditioning”  
Australian Catholic University, School of Exercise Science
- Lecturer: EXSC340 Advanced Exercise Physiology October 2018  
“Molecular biology of exercise”  
“Molecular bases of adaptation for strength and conditioning”  
Australian Catholic University, School of Exercise Science  
ESSA Accredited Master’s Program in Clinical Exercise Physiology
- Lecturer: EXSC635 Cardiometabolic Analysis and Rehabilitation August 2018  
“Diabetes Mellitus: Introduction, complications and medications”  
“Dyslipidemia, the metabolic syndrome and cardiovascular disease”  
Australian Catholic University, School of Exercise Science  
ESSA Accredited Master’s Program in Clinical Exercise Physiology
- Lab Instructor: EXSC635 Cardiometabolic Analysis and Prescription August 2018  
“Diabetes Mellitus: Chronic inflammation and the pathway to insulin resistance”  
“Diabetes Mellitus: Introduction, complications and medications”  
“Dyslipidemia, the metabolic syndrome and cardiovascular disease”  
Australian Catholic University, School of Exercise Science
- Lecturer: EXSC340 Advanced Exercise Physiology October 2017  
“Molecular biology of exercise”  
“Molecular bases of adaptation for strength and conditioning”  
Australian Catholic University, School of Exercise Science
- Lecturer: EXSC635 Cardiometabolic Analysis and Prescription September 2017  
“Diabetes Mellitus: Chronic inflammation and the pathway to insulin resistance”  
“Diabetes Mellitus: Introduction, complications and medications”  
“Dyslipidemia, the metabolic syndrome and cardiovascular disease”  
Australian Catholic University, School of Exercise Science  
ESSA Accredited Master’s Program in Clinical Exercise Physiology
- Lab Instructor: EXSC635 Cardiometabolic Analysis and Prescription September 2017  
“Diabetes Mellitus: Chronic inflammation and the pathway to insulin resistance”  
“Diabetes Mellitus: Introduction, complications and medications”  
“Dyslipidemia, the metabolic syndrome and cardiovascular disease”  
Australian Catholic University, School of Exercise Science
- Lecturer: EXSC340 Advanced Exercise Physiology August 2016  
“Molecular bases of adaptation for strength and conditioning”  
Australian Catholic University, School of Exercise Science
- Course Development: HTIN5004 Integrated Approaches to Chronic Disease May 2015  
University of Sydney, Charles Perkins Centre
- Demonstrator: NUTM3002 Nutrition and Metabolism Advanced Concepts March 2015  
University of Sydney, School of Molecular Biosciences
- Lecturer: F782 Physiology and Pathophysiology of Lipid Rafts March 2011  
“The role of lipid rafts in insulin action and insulin resistance”  
Indiana University School of Medicine, Graduate Division

## **INVITED PRESENTATIONS**

---

- Invited Oral Presentation May 2019  
Institute for Research in Biomedicine Barcelona (IRB), Research Nodes Seminar Series  
Barcelona, Spain
- Invited Oral Presentation October 2018  
ANZOS-Breakthrough Discoveries Joint Annual Scientific Meeting  
Melbourne, VIC Australia
- Invited Oral Presentation October 2018  
University of Melbourne, Department of Physiology  
Melbourne, VIC Australia
- Invited Oral Presentation September 2018  
Salk Institute for Biological Studies  
San Diego, California USA
- Invited Oral Presentation March 2018  
Edith Cowan University, School of Medical and Health Sciences  
Joondalup, WA Australia
- Invited Oral Presentation October 2017  
Copenhagen Bioscience Conference: Metabolism in Action  
Copenhagen, Denmark
- Invited Oral Presentation August 2017  
Australian Institute of Sport  
Canberra, ACT Australia
- Invited Oral Presentation June 2017  
University of Copenhagen  
Copenhagen, Denmark
- Invited Oral Presentation May 2017  
Monash University, Biomedicine Discovery Institute  
Clayton, VIC Australia
- Invited Oral Presentation November 2016  
Deakin University, Metabolic Research Unit  
Geelong, VIC Australia
- Invited Oral Presentation October 2016  
Australian and New Zealand Obesity Society Annual Meeting  
Brisbane, QLD Australia
- Invited Oral Presentation September 2016  
University of Auckland, Liggins Institute  
Auckland, New Zealand
- Invited Oral Presentation August 2016  
Deakin University, School of Exercise and Nutrition Sciences  
Burwood, VIC Australia
- Invited Oral Presentation March 2016  
Victoria University, Institute of Sport, Exercise and Active Living Seminar Series  
Melbourne, VIC Australia
- Invited Oral Presentation December 2015  
2015 Australian Physiological Society Meeting  
Hobart, TAS Australia
- Invited Oral Presentation November 2015  
Exercise, Muscle & Metabolism 2015  
Melbourne, VIC Australia
- Invited Oral Presentation November 2015  
Baker IDI Heart and Diabetes Institute Seminar Series  
Melbourne, VIC Australia
- Invited Oral Presentation August 2015  
Charles Perkins Centre Early and Mid-Career Researcher (EMCR) Symposium  
The University of Sydney, Charles Perkins Centre, Sydney, NSW Australia

**INVITED PRESENTATIONS (*continued*)**

- Invited Oral Presentation August 2015  
Indiana University Center for Diabetes and Metabolic Diseases Seminar Series  
Indianapolis, Indiana USA
- Invited Oral Presentation December 2014  
2014 Australian Physiological Society Meeting  
Brisbane, QLD Australia
- Invited Oral Presentation December 2013  
2013 International Diabetes Federation World Diabetes Congress  
Melbourne, VIC Australia
- Invited Oral Presentation June 2013  
Indiana University School of Medicine, Endocrine Research Conference  
Indianapolis, Indiana USA
- Invited Oral Presentation in Cell Signaling Thematic Poster Session May 2013  
60<sup>th</sup> Annual Meeting of the American College of Sports Medicine  
Indianapolis, Indiana USA
- Invited Oral Presentation February 2012  
2<sup>nd</sup> Annual Indiana Physiological Society Meeting  
Ball State University, Muncie, Indiana USA
- Invited Oral Presentation July 2011  
Baker IDI Heart & Diabetes Institute Seminar Series, Melbourne, VIC Australia
- Invited Oral Presentation July 2011  
Garvan Institute of Medical Research, Sydney, NSW Australia
- Invited Oral Presentation April 2011  
Indiana University Center for Diabetes Research Seminar Series  
Indianapolis, Indiana USA
- Guided Poster Tour Oral Presentation June 2010  
70<sup>th</sup> Scientific Sessions of the American Diabetes Association  
Orlando, Florida USA

**PROFESSIONAL AND UNIVERSITY SERVICE**

- 12<sup>th</sup> International Symposium on AMP-activated Protein Kinase 2019  
Melbourne Conference Planning Committee
- Eastern Hill Research Infrastructure and Technology Committee 2018-present  
Committee Member and ACU Representative
- Chair, Postdoctoral Development Committee 2017-present  
Mary MacKillop Institute for Health Research
- Australia National Health and Medical Research Council 2017  
Early Career Researcher Observer, Grant Review Panels  
Canberra, ACT Australia
- Australian Catholic University Work Health and Safety Committee 2016-2019  
Committee Member
- Volunteer, Mass Spectrometry Facility Tours 2014-2016  
The University of Sydney, Charles Perkins Centre Donor Tours
- Founder and Chair, Exercise and Muscle Signalling Workshop 2014  
The University of Sydney, Charles Perkins Centre
- Presenter, Diabetes and Metabolism Division Representative 2013-2014  
Garvan Institute of Medical Research Public Tours
- Garvan Institute Work Health and Safety Committee 2013-2014  
Representative, Diabetes and Metabolism Division
- American College of Sports Medicine 2013  
Molecular and Cellular Regulatory Mechanisms Research Interest Group



**PROFESSIONAL AND UNIVERSITY SERVICE (*continued*)**

- 21<sup>st</sup> St Vincents and Mater Health Sydney Research Symposium Organizing Committee Member 2013
- Garvan Institute Postdoctoral Development Committee Committee Member 2012-2013
- Australia National Health and Medical Research Council Inaugural Postdoctoral Reference Group Symposium Participant Canberra, ACT Australia 2012
- IUPUI Responsible Conduct of Research Workshop Panel Member 2011
- Department of Cellular & Integrative Physiology Retreat Moderator for Graduate Student Session 2011
- American Society for Cell Biology Ambassador 2010-present
- Indiana University School of Medicine Department of Cellular & Integrative Physiology 2010 Summer Seminar Series Student Coordinator 2010
- Indiana University School of Medicine Science Olympiad Volunteer 2010
- Indiana University School of Medicine Graduate Committee Student Representative 2009-2012
- Indiana University School of Medicine Second Look Program Student Panel 2009
- Indiana University School of Medicine Student Mentor 2008-2012
- Indiana University School of Medicine Student Ambassador Student Coordinator for Campus Visits 2007-2011
- Butler University Biology Department Student Advisory Board 2006-2007
- Butler University Biology Department Student Mentor 2005-2007
- Butler University Biology Club Field Trip and Social Chair 2006-2007
- Wishard Memorial Hospital Pediatric Primary Care Center Founder and coordinator, Childhood Obesity Prevention Health Fair 2005
- Larue D. Carter Memorial Hospital Volunteer, Health Education Programs and Recreational Therapy 2003

**EDITORIAL BOARD MEMBERSHIP**

Asian Journal of Kinesiology July 2018-present

**AD HOC MANUSCRIPT AND GRANT REVIEWING**

- Cell Metabolism
- Diabetologia
- Journal of Clinical Endocrinology & Metabolism
- Scientific Reports
- American Journal of Physiology Endocrinology and Metabolism
- Molecular and Cellular Biology
- International Journal of Molecular Sciences
- Biological Trace Element Research
- Food and Chemical Toxicology
- Applied Physiology, Nutrition, and Metabolism
- PLOS ONE
- BioMed Research International
- Diabetes Australia Research Program, General Grant scheme
- National Health and Medical Research Council (Australia), Project Grant scheme

## **RESEARCH EXPERTISE**

---

- Human clinical trial design and registration
- Human ethics applications and good clinical practice documentation
- Human skeletal muscle biopsy collection, fibre preparation and permeabilization
- Animal ethics applications and colony management (mice and rats)
- Animal care and experimentation (mice, rats and swine)
- Cell culture (L6 myotubes, C2C12 myotubes, 3T3-L1 adipocytes, HEK293, Plat-E)
- Stem cell culture (mouse muscle satellite cells)
- Rodent dissection: brain, heart, liver, pancreas, kidneys, skeletal muscles, and fat pads
- Intraperitoneal (mice) and intravenous (swine) glucose and insulin tolerance testing
- *Ex vivo* skeletal muscle glucose uptake (mice)
- Maximal oxygen uptake testing (humans)
- Lode cycle ergometer and Parvo operation (humans)
- Treadmill maximal/submaximal exercise testing and training (mice)
- Blood collection (mice and swine)
- In situ skeletal muscle contraction using sciatic nerve stimulation (rats)
- EchoMRI body and tissue composition (mice)
- Mouse metabolic caging using the Comprehensive Lab Animal Monitoring System (CLAMS)
- Mass Spectrometer operation and maintenance
- Proteomics
- Phosphoproteomics
- Stable isotope labeling by amino acids in cell culture (SILAC)
- Phosphopeptide enrichment using titanium dioxide
- Strong cation exchange chromatography
- Preparation and analysis of protein: SDS-PAGE
- Western blot analysis
- Immunoprecipitation
- *In vitro* kinase assay
- Whole cell immunofluorescence
- Subcellular fractionation
- Fluorescent and confocal microscopy in cultured cells and intact tissue
- Oroboros Oxygraph-2k respiration and reactive oxygen species assays
- Seahorse respiration assays (Seahorse XF24 and XFp instruments)
- Insulin ELISA
- 2-deoxy-D-glucose uptake assay
- GLUT4 translocation assay
- Glycogen assay
- Fatty acid assay
- Triglyceride assay
- Amplex Red cholesterol assay
- Electroporation and plasmid transfection
- Luciferase assays
- siRNA knockdown
- Site directed mutagenesis
- Preparation and analysis of DNA and RNA: PCR, sequencing, agarose and acrylamide gel electrophoresis, plasmid isolation, restriction digest, ligation, vector construction