**Janine Anne Higgins, PhD**

Professor of Medicine

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***EXECUTIVE SUMMARY***

I am a Professor of Medicine, Division of Endocrinology, Diabetes and Metabolism, and a graduate of the Executive Leadership in Academic Medicine (ELAM) Program. I received my PhD in biochemistry at the University of Sydney and have spent the last 23 years conducting translational nutrition and metabolism research in rodent models, children, and adults at the University of Colorado. I am passionate about every stage of research, from basic to community services research, and committed to the personal and professional development of staff, Fellows, and Faculty at all career stages. My overarching career goal is to create and grow infrastructure that facilitates research excellence and an outstanding training environment.

***Leadership***

My current leadership roles include:

* Vice Chair for Research, Department of Medicine
* Director of Operations and MPI, Colorado Clinical Translational Science Institute (CCTSI)
* Director, Colorado Nutrition and Obesity Research Center (NORC) Clinical Intervention and Translation Core
* Chair, Presentations and Publications Committee for the NIH-funded multi-center study Treatment Options for Type 2 Diabetes in Youth (TODAY)
* CCTSI Nutrition Research Director
* Gender Related Equity Action Team (GREAT; DOP), Founding member

These roles provide a breadth of experience in departmental and cross-institutional strategic planning, implementation of new processes, stakeholder engagement, change management, communication, budget management, metrics development, and building diverse teams.

***Diversity, Equity, and Inclusion***

I believe that diversity is key to harnessing the power of any organization. Highlighting and promoting individual experiences to build equitable teams is crucial in creating a culture of trust. In a culture of trust, people are more willing to take risk, and take it more often. Missteps will be made and strategy may need to be modified, but, by working as a respectful team that both pushes and supports each other, major successes will be achieved. As a leader, it is my job to express respect for others, recognize their contributions, and promote accountability and awareness around diversity, equity, and inclusion.

***Funding***

PI: R01 (1)

Co-investigator: U01, OL1, U54, P30, OT2, R01 (2)

***Publications and Dissemination***

110 peer-reviewed publications, 4 textbook chapters, and 27 invited national and international talks

**Education**

University of Sydney Bachelor of Science (Honours Class I) 1991

University of Sydney Doctor of Philosophy in Biochemistry 1995

Drexel University Executive Leadership in Academic Medicine Fellowship 2020 - 2021

**Academic Appointments**

University of Sydney, Department of Biochemistry Lecturer 1992 - 1995

University of Wollongong, Biomedical & Life Sciences Lecturer 1996 - 1999

University of Colorado Denver, Department of Pediatrics Instructor 2000 - 2006

University of Colorado Denver, Department of Pediatrics Assistant Professor 2006 - 2012

University of Colorado Denver, Department of Pediatrics Associate Professor 2012 - 2018

University of Colorado Denver, Department of Pediatrics Professor 2018 – present

University of Colorado Denver, Department of Medicine Professor 2022 – present

**Professional Positions**

University of Sydney Laboratory Demonstrator 1992 - 1995

University of Sydney Research Assistant 1995 - 1996

University of Wollongong Laboratory Manager 1996 - 1999

Pediatric Clinical and Translational Research Center Manager, Nutrition Core 2003 - 2007

Gelesis Inc. Scientific Advisory Board 2009 - 2012

Colorado Clinical and Translational Sciences Institute Nutrition Research Director 2007 - present

Colorado Clinical and Translational Sciences Institute Director of Operations 2014 - present

Vital Start Board Member 2017 - 2020

Colorado Nutrition and Obesity Research Center Associate Director (CIT Core) 2019 – 2021

Colorado Nutrition and Obesity Research Center Director (CIT Core) 2021 – present

CU Anschutz Dept of Pediatrics, Endocrinology Research Director 2021 – 2022

CU Anschutz Dept of Medicine Vice Chair for Research 2022 – present

**Honors, Special Recognition, and Awards**

* Australian Diabetes Society/Rhône Poulenc Rorer Career Development Award 1995
* Pharmacia Award for Excellence in Molecular Biology 1995
* Department of Education, Employment and Workplace Relations Australian Postgraduate Award 1992
* Colorado National Obesity Research Center (NORC) Outstanding Faculty Member Award 2016

**Membership in Professional Organizations**

* Member of the Obesity Society (formerly NAASO)
* Member of the American Diabetes Association

**Major Committee and Service Responsibilities**

Diversity, Equity, and Inclusion Efforts

* Completion of CU Anschutz Equity Certificate Program (2020)
* Gender Related Equity Action Team (GREAT), Founding member
	+ DOP initiative to address faculty and staff survey results showing that 41% of respondents believe that they had been treated differently by a supervisor or colleagues because of an aspect of their identity (race, ethnicity, gender, sexual orientation, age, believes, physical disability, etc.), with gender being the most common response.
	+ Serves as a council to provide support, education, and input on gender equity scenarios and challenges in DOP, and referrals to campus services as necessary
* Development of modular training and onboarding activities for new CCTSI staff across multiple Cores
	+ I created and led this initiative for self-paced training and competency acquisition to provide learning options for staff entering from different educations, careers, and backgrounds
	+ Multiple different trainers and mentors guide staff throughout the process to establish a broad range of interpersonal connections and prevent possible issues that may arise from personal tensions between an established single trainer and a new staff member
* Vital Start, Founding Board Member (2017 - 2020)
	+ This organization provides American Heart Association Basic Life Support training at alternative schools to provide exposure to and interest in health care careers for underserved youth
* Selection committee for CHCO Academy of Nutrition and Dietetics Dietetic Internship Program
	+ In this role for 7 years, I have continuously advocated to keep screening criteria broad and entry GPAs low whilst formalizing and adding value, though a point scoring system, for any relevant life experiences during the review process

Departmental

* Department of Medicine, Vice Chair for Research (2022 – present)
* Department of Pediatrics Mentorship and Professional Development Committee (2012 – 2022)
* Chair, search committee for Pediatric Nutrition Section Head (2021 – 2022)
* CCTSI Director of Operations

 - Development and tracking of unit-specific metrics for 12 large service Cores
- Coordination and rationalization of services, elimination of redundancies, process improvement
- Budget tracking across multiple institutions and systems

 - Strategic planning for coordinated service provision across units and institutions

- Development and implementation of strategic, integrated communications plans, including information available on the CCTSI website

 - NIH CTSA grant submissions and annual reports

- Gather key data and prepare business plans for new endeavors/services

 - Implementation of processes/systems based on process improvement/QI projects, examples:

\* Provision of research coordinator services across departments at University of Colorado Hospital (UCH) by the Clinical Research Support Team (CreST). I developed the business plan for introduction of this service, hired and supervised the CReST manager, and was responsible for achievement of program financial and productivity targets. Due to its success, CReST was transitioned to Vice Chancellor for Research’s Office as a core campus resource in 2021.

\* Introduction of a unified scheduling system across all UCH CTRC services and Cores (nursing, nutrition, energy balance lab, core lab, cardiovascular imaging, outpatient and inpatient space, equipment) that facilitates real time scheduling for all appointments. This system now contains over 700 protocols, encompassing over 4,000 workflows for individual study visits, and has over 1,000 unique users. Since March 2019, this system has improved productivity at the adult CTRC, increasing research visit numbers by 12.7% for outpatient and 46.2% for inpatient visits.

 \* Introduction of charge nurses at UCH and CHCO CTRCs to accommodate consistency of

 communication between nursing staff and investigators and rationalization of manager roles

 \* Built a unified database for monthly collection and tracking of CTRC metrics
- Preparation of NIH- and University-requested reports & materials for University/Hospital publications

* CCTSI Nutrition Research Director

 - Oversight of all adult and pediatric CTRC Nutrition Core services & data collection for > 70 protocols

 - Responsible for team building, dispute resolution, and staff disciplinary action

 - Provide expert Nutrition advice for investigators submitting grant applications or requesting CTRC support

 - Budget management and productivity, setting/tracking metrics for program success

 - Process improvement: in two years, 50% increase in productivity with no budget increase, 14% increase in customer satisfaction ratings across all client types (investigators, participants, etc.)

 - Establishment/maintenance of Standard Operating Procedures (SOP), adopted nationally by the National Association of Bionutritionists (NAB)

* Colorado Nutrition and Obesity Research Center (NORC) Clinical Interactions and Translation (CIT) Core Director

- Develop strength in nutrition for future grant applications, NORC was previously focused on obesity

- Increase Department of Pediatrics faculty involvement in the NORC

- Integration of NORC and CCTSI metabolic kitchens and dietary intake measurement services, elimination of duplication

- Development of NORC CIT core key metrics

- Introduction of new services, such as ad libitum feeding and hunger/satiety assessment

* Member, Gender Related Equity Action Team (GREAT)
* Member, selection committee for CHCO Academy of Nutrition and Dietetics Dietetic Internship Program

Institutional

* Department of Pediatrics representative to the Faculty Senate 2011-2014
* Member, CU Anschutz COVID Research Committee
	+ This committee, convened by the VC for Research and AVC for Regulatory Compliance, represented all sites of clinical research at Anschutz Medical Campus and devised and implemented the clinical research shut-down and restart processes.
	+ I was a core member of the working that devised and ran the Clinical research Restart portal
* Member, CCTSI MicroGrant committee
* Member, Scientific Advisory and Review Committee (SARC) 2003-2019
* Member, Children's Hospital Colorado ONA Committee (to assess feasibility of research applications)
* Member, Children's Hospital Colorado Healthy Hospital Initiative (HHI) 2013-2018

 *Children's Hospital Colorado* *became the first hospital in Colorado to reach CDPHE Healthy Hospital Compact Platinum status in 2017*

* Standing Reviewer; CCTSI CO-pilot award program
* Standing reviewer, CCTSI Pre-K program
* Reviewer; CCTSI K to R program
* Member of Children’s Hospital Colorado Obesity Committee 2009 - 2017
* Panel member, Children’s Hospital Colorado 2nd Annual Research Symposium (2016)

National

# Scientific Expert, American Association of Cereal Chemists International (AACC Int) Expert Committee for Recommendations on Glycemic Carbohydrate Definition

# National training on anthropometric measurements and form completion for the NIH-funded multi-center Treatment Options for Type 2 Diabetes in Adolescents and Youth (TODAY) study, Washington, DC, in 2002 and Denver, CO, in 2006

# Chair, TODAY Ancillary Studies Committee 2013 - 2017

# Chair, TODAY Publications and Presentations Committee 2017 - present

# National training on completion and analysis of 3d food records for the NIH-funded multi-center Study to Explore Early Development (SEED) of Autism study, Atlanta 2004

# Software training and statistical certification of NDS operators for central analysis of SEED dietary data.

# Committee member, TODAY Recruitment and Retention Committee

# Committee member, TODAY Forms and Manuals of Procedure (MOP) Committee

# Co-chair, New Treatment Paradigms Session at FASEB Summer Research Conference: The Physiological Basis for Obesity Therapeutics (2009). Snowmass, Colorado.

* Chair, Exercise as a perturbation to energy balance session at Recent Advances and Controversies in the Measurement of Energy Metabolism (RACMEM; 2008)
* Chair, Added Sugars and Carbohydrate Quality - Who, What, When, Where, Why, and What Happens Next? (The Obesity Society’s Obesity Week; 2019). Las Vegas, Nevada.
* Member of the Pediatric Obesity special interest group of the Obesity Society
* Member of the National Association of Bionutritionists
* National contact for several newspaper and magazine agencies as a resistant starch and dietary fiber expert (eg. LA Times, Women’s Health, Prevention magazine)

International

* Grant reviews for the Diabetes UK (United Kingdom). Expert external reviewer for grant subjects of fiber and resistant starch.
* Grant Reviews for the Scottish Executive (United Kingdom). Expert external reviewer for grant subjects of glycemic index/load, fiber, and resistant starch.
* Program Committee Member, “Innovative Technologies for Dietary Intakes Measurements” conference (2018) London, UK.
* International PhD and MSc candidate thesis reviews for the University of Sydney, Australia.
* Chair, Diet and Energy Balance Session: International Conference on Obesity (2006) Sydney, Australia.
* Chair, “Added sugars and carbohydrate quality”: The Obesity Society Annual meeting, Las Vegas (2019)
* Panelist, International Life Sciences Institute (ILSI), North America chapter, Future Research Needs (FRN) Assessment for Fructose/Sugar and Health Outcomes
* Ad hoc reviewer for international peer-reviewed journals including, but not limited to, Journal of Nutrition, British Journal of Nutrition, International Journal of Food Chemistry, Journal of Nutritional Biochemistry, Diabetes, Obesity Research, Nutrition & Metabolism
* International scientific expert on resistant starch with press coverage in the USA and abroad linked with my faculty position at CU Anschutz

**Review and Referee Work**

* Grant reviews for Diabetes UK, United Kingdom. Expert external reviewer for grant subjects of fiber and resistant starch. Grants reviewed since 2008.
* Grant reviews for the Scottish Executive (United Kingdom). Expert external reviewer for grant subjects of glycemic index/load, fiber, and resistant starch. Grants reviewed 2006-2010.
* International Masters and PhD thesis reviews for the University of Sydney, Australia.
* Department of Medicine Early Career Scholars Award reviewer 2016
* Ad hoc reviewer for international peer-reviewed journals including, but not limited to, Journal of Nutrition, British Journal of Nutrition, International Journal of Food Chemistry, Journal of Nutrition Education and Behavior, Journal of Nutritional Biochemistry, Diabetes, Obesity Research, Nutrition & Metabolism

**Invited Extramural Lectures, Presentations and Visiting Professorships**

International

1. J Higgins (2002) The Role of Resistant Starch in Energy metabolism. Australian Institute of Food science Technology Annual Meeting, Sydney, Australia.
2. J Higgins (2004) Glycemic and insulinemic responses to resistant starch ingestion: effect of cooking and metabolic ramifications. International Food Technology Annual Meeting, Las Vegas NV.
3. J Higgins (2005) Resistant starch and fat oxidation – a new dimension emerges. International Focus on Resistant Starch Meeting, Sydney and Melbourne, Australia.
4. J Higgins (2006) Resistant Starch: a novel approach to improving food quality. International Food Technology Annual Meeting, Orlando FL.
5. J Higgins & I Brown (2008) The effects of resistant starch on energy metabolism. STARCH 2008, Nottingham, England.
6. J Higgins (2009) Carbohydrates: Impact on human health and weight. International Food Technology Annual Meeting, Anaheim CA.
7. J Higgins (2011) Metabolism of sugars versus starches: Are Dietary Guidelines for Added Sugar Warranted? Boden Institute of Obesity, Nutrition and Exercise Symposium Sydney, Australia.
8. J Higgins (2018) A Cautionary Tale for AI Processing: Extraneous foods and images on serveware can cause overestimation of intake from visual dietary analysis. Innovative Technologies for Dietary Intakes Measurements Conference, London UK.
9. J Higgins (2018) Simplified Methods for Estimating Energy Density From Food Images. Innovative Technologies for Dietary Intakes Measurements Conference, London UK.

National

# J Higgins (2000) The metabolic effects of resistant starch consumption. American Dietetic Association Annual Meeting, Denver, CO.

# J Higgins (2004) Glycemic and insulinemic responses to resistant starch ingestion: effect of cooking and metabolic ramifications. International Food Technology Annual Meeting, Las Vegas NV.

1. J Higgins (2004) Carbohydrates: Are they all evil? ICI Annual Science & Technology Meeting, NJ.

# J Higgins (2005) Burn fat the easy way: eat more resistant starch. Nutracon Annual Meeting, Anaheim, CA.

# J Higgins (2005) Health benefits of resistant starch. National Symposium on Dietary Fiber, Chicago, IL.

# J Higgins (2007) Metabolic Effects of Resistant Starch: Impact on fat oxidation, satiety, and weight gain. American Dietetics Association Annual Meeting, Philadelphia.

# J Higgins (2007) Resistant Starch: Improving quality of life through food quality. Inaugural Symposium on Functional Foods and Health, Iowa State Unversity, Ames, IA.

# J Higgins (2008) Carbohydrates: Glycemic impact and implications for weight management. American Diabetes Association Annual meeting, San Francisco CA*.*

# J Higgins (2008) Radioactive tracers in energy balance studies. Recent Advances and Controversies in Metabolism and Energy Measurement, Denver, CO.

# J Higgins (2009) Carbohydrate quality in health and disease: Using research data in clinical care. American Dietetics Association Annual Meeting. Denver, Colorado.

# J Higgins and I Brown (2009) Resistant starch and obesity: Obesity treatment and prevention via food design. FASEB Summer Research Conference: The Physiological Basis for Obesity Therapeutics. Snowmass, CO.

# J Higgins (2011) Resistant Starch and the “Second Meal Effect”: Why is it so hard to predict blood glucose readings? Rocky Association of Diabetes Educators Annual Meeting, Denver, CO.

# J Higgins (2012) Novel Anorexia Nervosa Refeeding Strategies: From Human to Rat and Back Again. Development Psychobiology Research Group Biennial Meeting, Morrison, CO.

# J Higgins (2013) The Skinny on Resistant Starch: Is it Really a Weight Loss Wonder Food? Colorado State University College of Health and Human Science Seminar series, Fort Collins CO.

# J Higgins (2014) Resistant starch and inflammation: systemic effects Iowa State University Nutrition Conference: Integrating Resistant Starch, Microbiome, and Disease Risk Reduction. Ames, Iowa.

# J Higgins (2015) Resistant starch and inflammation: a role in the treatment of inflammatory bowel disease? Experimental Biology 2015, "Resistant Starch, Microbiota and Gut Health" symposium, Boston MA.

# J Higgins (2015) Assessment of scientific literature: tips to make you an expert in any field, no matter how much data is out there. Colorado Academy of Nutrition and Dietetics Annual Meeting, Broomfield CO.

1. J Higgins (2017) Resistant Starch: Fermentation and Health Outcomes. American Society for Nutrition Annual meeting, Chicago IL.

**Teaching Record**

Postgraduate Didactic Teaching

* Biochemistry for Pediatric Dental Residents 2005 – 2017

 - Course Director; developed course curriculum

* Nutrition Assessment Methods lecture for CLSC 7400: Theory and application

 of techniques for the study of human metabolism *in vivo* 2009 – 2014

* Assessing Scientific Literature and Minimizing Bias 2012 – present

 Invited lecture at meetings/courses across campus

* Nutrition Research 101 2013 – present

 CHCO and TriCounty Health Department Dietetic Internship Programs

 - Course Director; developed course curriculum

* Carbohydrate Biochemistry: Everything you never wanted know 2013 – present

 Core Lecture for CHCO and TriCounty Health Department Dietetic Internship programs

* Lab Management Skills Workshop (Office of Postgraduate Education) 2013 – 2017

 - Course Director; developed course curriculum

Mentorship

* Director (2007 – 2020), CCTSI Nutrition Internship Program; mentoring up to 5 interns per year (43 interns, 2007-2013) and developing core and student-specific curricula and materials

 - 75% of CCTSI Nutrition trainees who applied to an American Academy of Nutrition and Dietetics (AND) Accredited Dietetic Internship Program were accepted into the most challenging and highly ranked programs in the country (average acceptance <50%).

 - More than 80% of all CCTSI Nutrition trainees are currently actively employed or training in the field.

* Director (2015 – 2020), Research Program for the Children’s Hospital Colorado Dietetic Internship Program; mentoring 12 post-graduate interns per year

 - This Internship Program is highly innovative comprising of didactic lectures, flipped classroom sessions, and experiential learning

 - The only AND Dietetic Internship program in the country that has a dedicated research rotation with an IRB-approved nutrition protocol

 - 100% of interns have ranked this program as an exceptional learning experience (the highest ranking on a 5 point Likert scale); average percentile score for individual program components is 82%.

* Mentor (content or career) to 17 trainees
	+ Currently one post-doctoral Fellow, one junior faculty at CU Anschutz and one junior faculty at Colorado State University (this individual not included in trainee metrics).

 - 83% of all former post-graduate trainees currently have NIH or other external funding.

 - Mentees have a total of 104 first author publications to date

 - Strong commitment to creating networking and collaboration opportunities for trainees, evidenced by the fact that I am a co-author on less than 50% of mentee first author publications.

 - The research publication rate for my trainees is >3.5 during their training and immediate post-training (+ 2 years) period.

* Mentor to 3 undergraduate interns from the CU Anschutz Office of Diversity’s Undergraduate Pre-Medical Program and Aurora LIGHTS pipeline programs (2002 – 2008)

- One of these interns is poised to be a Nursing Informatics leader at Children’s Hospital Colorado, another is a national practice manager at Deloitte (an international top 5 consultancy firm)

* Chair, Nutrition journal club which meets weekly to discuss and promote evidence-based best practices

**Grant Support**

**Ongoing Research Support**

1UL1 TR002535 (PI Sokol) NIH/NCATS 05/01/2018 – 4/30/2023

Colorado Clinical Translational Research Institute (CCTSI)

The objective is to provide education and translational research training to new and established investigators, invest in novel research methodology/equipment, and provide the infrastructure for performance of clinical (patient-oriented) investigation in infants, children and adolescents, and adults.

Role: Director of Operations and Nutrition Research Director.

I am responsible for day-to-day operations and financial/metrics tracking for the nursing, lab, and nutrition Cores at all affiliated Clinical and Translational Research Centers (CTRCs). As CCTSI funding changes focus over the grant cycle, it is my responsibility to introduce process improvements to increase the efficiency of all units and maintain value-added services with financial transparency. As Nutrition Research Director, I assist investigators and trainees with preparation of the nutrition component of grant and protocol applications and oversee Nutrition Core staff as they design and prepare metabolic diets; conduct dietary counseling, dietary intake, and anthropometric assessments; and perform indirect calorimetry.

OT2HL161847-01 (PI Erlandson) NIH/NHLBI 10/01/2021 - 09/30/2023

NIH RECOVER: A Multi-site Observational Study of Post-Acute Sequelae of SARS-CoV-2 Infection in Adults

This national consortia aims to gain insight into the incidence and course of the myriad of clinical effects experienced by patients following recovery from acute COVID infection.

Role: Co-Investigator.

I am responsible for protocol implementation and operations involving CTRC visits.

U01 DK61242 (PI Zeitler) NIH/NIDDK 10/01/2020 – 06/30/2023

TODAY (Treatment Options for Type 2 Diabetes in Adolescents and Youth)

This is a multi-center clinical trial to assess the efficacy and safety of potential treatment options for Type 2 diabetes mellitus in adolescents.

Role: Co-Investigator.

I am Chair of the Publications and Presentations Committee for the TODAY study. I have been a co-investigator from the UCD site since study inception and have been on committees for data collection and development of MOPs. I was the secondary Physical Activity and Lifestyle Coach (PAL) for the duration of the lifestyle invention which was based on weight loss via dietary and physical activity changes.

P30 DK48520 (PI MacLean) NIH/NIDDK 08/01/2020 - 07/31/2025

Nutrition and Obesity Research Center (NORC)

The major goal is to create an environment in which researchers are able to work together to conduct high-quality research in nutrition and obesity. The NORC helps create that environment by facilitating interaction and collaboration among investigators working at different levels of basic and clinical investigation, from gene to cell to organ to animal model to human to clinical to community intervention.

Role: Director, Clinical Intervention and Translation (CIT) Core.

I am responsible for oversight of all CIT resources, including budget and metrics, design and delivery of intervention diets, nutritional data collection and analysis, and study design consultation.

U54 AG062319 SCORE (PI Kohrt) NIH/NIA 10/1/2018 – 9/30/2023

Bioenergetic and Metabolic Consequences of the Loss of Gonadal Function

The long-term goal of this project is understand how the development of obesity prior to menopause alters the menopausal impact on disease. In this sub-clinical aim of the project, we use rodent models of obesity and menopause to examine the hypothesis that premenopausal obesity pits the protective effects of extra-ovarian estrogen production against the detrimental consequences of pre-existing metabolic dysfunction.

Role: Co-Investigator.

I am responsible for study design and implementation, co-mentoring post-doctoral Fellows working on this project, data analysis and interpretation, and manuscript preparation.

R01DK122473 (PI Higgins; National PI Sazonov) NIH/NIDDK 09/01/2019 – 05/31/2023

Sensor-based Just-in Time Adaptive Interventions (JITAIs) Targeting Eating Behavior

###### This project relies on the synergy of wearable sensor technology, machine learning, behavioral science, personalized medicine, and nutrition to deliver and test just in time adaptive interventions (JITAIs) for weight loss. The proposed intervention uses technology to continuously monitor objective eating behavior to provide personalized intervention in the times, locations, and situations where it will have greatest impact on eating and weight using mHealth technology.

Role: PI.

I am responsible for study design, nutritional data collection and analysis, and manuscript preparation.

R01 DK108366 (PI Lozupone) NIH/NIDDK 04/23/2021 – 03/31/2026

Dietary and symbiotic strategy to limit gut microbiome dysbiosis and protect against Clostridoides difficile infection

To goal is to gain mechanistic insight into the relative contributions of high dietary fiber and low dietary fat in preventing antibiotic-induced gut microbiome disturbance and CDI in mice, and to test a higher-fiber/lower-fat dietary intervention for prevention of *C. difficile* recurrence in individuals with cancer

Role: Co-Investigator.

I am responsible for study design, design and delivery of the dietary intervention in children and adults, nutritional data collection and analysis, and manuscript preparation.

R01 DK125653 (PI Broussard) NIH/NIDDK 07/01/2020 - 06/30/2025

Circadian-based meal timing as a countermeasure to metabolic dysfunction during circadian misalignment.

To test time restricted dietary intake as a novel countermeasure to the metabolic disruptions of circadian misalignment (eg. Shift work) in an inpatient setting. Participants will undergo circadian misalignment with or without the novel countermeasure of restricting food intake to the daytime.

Role: Co-investigator.

I am responsible for study design, nutritional intervention, nutritional data collection and analysis, and manuscript preparation.

**Recently Completed Research Support**

R01 HL134887 (PI Seals) NIH/NHLBI 12/01/2016 - 11/30/2021

Translational Studies of Age-Associated Arterial Dysfunction, Western Diet and Aerobic Exercise: Role of The Gut Microbiome

This award will investigate the potential causal role of the gut microbiome in the effects of aging, western diet and exercise on arterial function, and gain insight into the underlying metabolomic and inflammatory mechanisms in young and older exercising and non-exercising healthy adults, using a randomized, single-blind, controlled feeding crossover study design.

R01 DK108366 (PI Palmer) NIH/NIDDK 12/01/15 - 11/30/2020

Diet/Gut Microbiome Interaction Influence Inflammatory Disease In HIV Patients

This study will determine the effects of a Western high fat diet (HFD) on the HIV-associated gut microbiome and inflammatory/metabolic co-morbidities, by studying individuals in rural and urban Zimbabwe who consume relatively Agrarian versus Western diets, and in individuals in the US who are consuming controlled Agrarian versus Western-type diets during a 4 week diet intervention.

Bill and Melinda Gates Foundation 07/01/2017 – 12/31/2019

This project to developed, tested, and validated dietary monitoring systems, which require no self-report, to assess free-living dietary intake across the lifespan in developing countries.

Role: PI

I was responsible for study design, development of training materials and SOPs for lab studies in the USA and field sites in Africa, overseeing nutritional data entry and analysis, and manuscript preparation.

###### Publications *(all last author publications in this list represent senior author status)*

***84 publications***

*80 Papers published in peer reviewed journals: 13 first author, 11 second author, 16 senior author*

*4 textbook chapters: One first author, two senior author*

*NOTE:* ***Total publications is 110****. Of the dozens of TODAY publications, I have only listed those which I directly contributed to as a main author. Those which I edited/reviewed or did not contribute substantively to, I have not included in this list.*

1. Higgins JA, Brand Miller J, and Denyer G (1996) Long-term consequences of amylose, amylopectin and glucose feeding in the rat.  *J. Nutr*. **126**: 596-602. PMID: 8598543
2. Colwell D, Higgins JA, and Denyer G (1996) Incorporation of 2‑deoxy‑D‑glucose into glycogen. Implications for measurement of tissue‑specific glucose uptake and utilization. *Int. J. Biochem. Mol. Biol.* **28**: 115-121. PMID: 8624840
3. Wiseman C, Higgins JA, Denyer G, and Brand Miller J (1996) Amylopectin starch induces non-reversible insulin resistance in rats. *J. Nutr*. **126**: 410-415. PMID: 8632213
4. Higgins JA, Proctor D, and Denyer GS (1999) Aging changes tissue-specific glucose metabolism in rats. *Metab.* **48**: 1445-1449. PMID: 10582555
5. Storlien, L, Higgins, JA, Thomas, T, Brown, M, Wang, H.Q, Wang, X.F, and Else, P. (2000) Diet composition and insulin action in animal models. *Br. J. Nutr.* **83**: S85-S90. PMID: 10889797
6. Storlien LH, Tapsell LC, Fraser A, Leslie E, Ball K, Higgins JA, Helge JW, Owen N (2001) Insulin resistance. Influence of diet and physical activity. *World Rev Nutr Diet*. **90**:26-43. PMID: 11545043
7. Brown, MA, Storlien, LH, Brown, IL, Higgins, JA (2003) Cooking attenuates the ability of high-amylose meals to reduce plasma insulin concentrations in rats. *Br J Nutr*. **90**:823-7. PMID: 13129452
8. Higgins, JA (2004) The role of resistant starch consumption in weight loss. *Agro FOOD Industry HiTech.* **Jan/Feb**: 45-47.
9. Higgins JA, Higbee DR, Donahoo WT, Brown IL, Bell ML, Bessesen DH (2004) Resistant starch consumption promotes lipid oxidation. *Nutr. Metab*. **1**:8. PMID: 15507129
10. Higgins, JA (2004) Resistant starch: metabolic effects and potential health benefits. *J. AOAC Int.* **87**: 761-8. PMID: 15287677
11. Donahoo WT, Bessesen DH, Higbee DR, Lei S, Grunwald GK, Higgins JA (2004) Assessment of Dietary Compliance Using Serum Lithium. *J. Nutr.* **134** : 3133-3136. PMID: 15514287
12. MacLean PS, Higgins JA, Johnson GC, Fleming-Elder BK, Donahoo WT, Melanson EL, Hill JO. (2004) Enhanced metabolic efficiency contributes to weight regain after weight loss in obesity-prone rats. *Am J Physiol Regul Integr Comp Physiol.* **287**: R1306-15. PMID: 15331386
13. MacLean PS, Higgins JA, Johnson GC, Fleming-Elder BK, Peters JC, Hill JO. (2004) Metabolic adjustments with the development, treatment, and recurrence of obesity in obesity-prone rats. Am J Physiol Regul Integr Comp Physiol. **287**:R288-97. PMID: 1504418
14. Higgins JA, Brown MA, Storlien LH (2006) Consumption of resistant starch decreases postprandial lipogenesis in white adipose tissue of the rat. *Nutr J.* **20**:25. PMID: 16987425
15. Maclean PS, Higgins JA, Jackman MR, Johnson GC, Fleming-Elder BK, Wyatt HR, Melanson EL, Hill JO (2006) Peripheral Metabolic Responses to Prolonged Weight Reduction that Promote Rapid, Efficient Regain in Obesity-Prone Rats. *Am J Physiol Regul Integr Comp Physiol*. **290**:R1577-88.

 PMID: 16455763

1. The TODAY Study Group (2007) Treatment Options for Type 2 Diabetes in Adolescents and Youth (TODAY): a study of the comparative efficacy of metformin alone or in combination with rosiglitazone or lifestyle intervention in adolescents with type 2 diabetes. *Pediatric Diabetes* **8**: 74–87. PMID: 19823189
2. Jackman MR, Steig A, Higgins JA, Johnson GC, Fleming-Elder BK, Bessesen DH, MacLean PS. (2008) Weight Regain After Sustained Weight Reduction is Accompanied by Suppressed Oxidation of Dietary Fat and Adipocyte Hyperplasia. *Am J Physiol Regul Integr Comp Physiol* 294: R1117-R1129.

 PMID: 18287221

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