

Paul S. MacLean, Ph.D.

Professor of Medicine and Pathology

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PERSONAL STATEMENT

I am a tenured Professor at the University of Colorado School of Medicine with over 30 years of experience studying obesity and its metabolic complications. I have specific interests in the biological drivers of weight regain after weight loss, exercise as a strategy for weight loss maintenance, and understanding how obesity affects key aspects of women’s health across the lifespan. My women’s health research on obesity has included studies of mammary gland development and its function during lactation, perinatal metabolic programming, the menopausal transition, and the risk for breast cancer. I am dedicated to building and supporting the broader research and education enterprise on the Anschutz Medical Campus through the Colorado Nutrition Obesity Research Center, the Colorado Clinical Translational Science Institute, and the University of Colorado Cancer Center. Over the past 25 years at the University of Colorado, I have leveraged their resources to develop the next generation of scientists who will advance the treatment of obesity and its complications.

EDUCATION AND TRAINING

1987 – 1992	B.S., Brigham Young University, Exercise Science
1992 – 1994	M.S., Brigham Young University, Physiology
1995 – 1999	Ph.D., East Carolina University Brody SOM, Biochemistry
1999 – 2001	Post-Doctoral Fellow, East Carolina University Brody SOM

CURRENT POSITIONS/APPOINTMENTS

University of Colorado School of Medicine	Professor of Medicine and Pathology
Colorado Nutrition Obesity Research Center	Director and PD/PI Associate Director, Energy Balance Assessment Core
Colorado Clinical Translational Sciences Institute	Co-Director, PreK Program Associate Director, K12 Program and the Pre-Doc and Post-Doc T32 Programs
Anschutz Medical Campus	Co-Chair, Institutional Animal Care and Use Committee Associate Director, T32 on Metabolism, Obesity, and Diabetes
University of Colorado Graduate School	Co-Chair, Nutrition and Metabolism Track, Integrative Physiology Program
The Obesity Society	Secretary, ObesityWeek® Board of Directors

CURRENT FUNDING/RESEARCH SUMMARY

PI/MPI: R01, U01, U54 (project lead), and P30; *R01 pending*
Co-Inv: VA Merit, R01, UM1, T32 (3), and K12; *R01 pending*
Mentored CDAs: U54 Scholar, USDA Fellowship, and K12; *2 K01s, F32 pending*
Dissemination: 135 publications, 158 invited lectures, 145+ abstracts

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PROFESSIONAL POSITIONS

Faculty Appointments at the University of Colorado School of Medicine

7/01 – 6/07 Assistant Professor of Medicine, Division of Endocrinology, Metabolism, and Diabetes
 7/07 – 6/14 Associate Professor of Medicine, Division of Endocrinology, Metabolism, and Diabetes
 5/14 – 6/14 Associate Professor of Pathology
 7/14 – Professor of Medicine and Pathology (tenured)

Appointments at the University of Colorado Graduate School

7/04 – 10/12 Clinical Sciences Program
 2/06 – 3/13 Physiology and Biophysics Program
 9/06 – Biomedical Sciences Program
 1/11 – 3/13 Reproductive Sciences Program
 11/13 – Integrative Physiology Program

Administrative Appointments at the University of Colorado

8/04 – Associate Director, NORC Energy Balance Assessment Core
 8/04 – 12/18 Associate Director, NORC Molecular, Cellular, & Analytical Core
 8/04 – 7/07 Director, Center for Human Nutrition Metabolic Phenotyping Facility
 7/06 – Co-Chair, UC Denver Institutional Animal Care and Use Committee,
 Office of the Vice Chancellor for Research.
 8/08 – 7/19 Research Director, Division of Endocrinology, Metabolism, and Diabetes
 5/11 – 11/15 Director (2011 - 2014), Program in Energy Metabolism
 Colorado Obesity Research Initiative (CORI)
 12/14 – 12/18 Associate Director, Colorado Nutrition Obesity Research Center
 12/18 – 5/19 Interim Director, Colorado Nutrition Obesity Research Center
 Acting Director, NORC Molecular, Cellular, & Analytical Core
 1/19 – 3/22 Director of Research Integration, Anschutz Health and Wellness Center
 5/19 – Director, Colorado Nutrition Obesity Research Center

Other Professional Positions

2008 Co-Founder and Co-Chair, RACMEM 2008
 “Recent Advances and Controversies in the Measurement of Energy Metabolism”
 International methods and technology conference, February 5th-7th, 2008
 Denver, Colorado USA
 2009 Co-Chair, FASEB Summer Research Conference on Obesity 2009
 “The Physiological Basis for Obesity Therapeutics,” August 16th-21st, 2009
 Supported by R13 NIH DK084625 (PI- MacLean, \$18,000)
 Snowmass Village, Colorado USA
 2009 – 2015 Editorial Board Member, American Journal of Physiology-
 Regulatory, Integrative, and Comparative Physiology
 2011 Co-Organizer, RACMEM 2011
 “Recent Advances and Controversies in the Measurement of Energy Metabolism”
 International methodological meeting, November 2nd – 4th, 2011
 Maastricht, The Netherlands
 2014 Co-Organizer, RACMEM 2014
 “Recent Advances and Controversies in the Measurement of Energy Metabolism”
 International methods and technology conference, October 9th – 12th, 2011

- Tokyo, Japan
- 2012 – 2015 Editorial Board Member, *Frontiers in Physiology*
- 2014 Co-Chair, NIH Working Group
 “Innovative Research to Improve Maintenance of Weight Loss”
 NIH workshop sponsored by NHLBI/NCI/NIDDK, June 24-25, 2014
 Bethesda, Maryland USA
- 2015 Panel Member, NIH Working Group “Self-Regulation of Appetite – It’s Complicated”
 NIH workshop sponsored by NHLBI/NIDDK, June 24-25, 2015
 Bethesda, Maryland USA
- 2016 Co-Chair, “Core Measures for Weight Loss Studies”
 NIH workshop sponsored by NHLBI/NCI/NIDDK/OBSSR, May 25-26, 2016
 Bethesda, Maryland USA
- 2017 – 2018 Co-Chair, ObesityWeek Program Committee, The Obesity Society
- 2017 – 2022 Co-Chair, “The ADOPT (Accumulating Data to Optimally Predict obesity Treatment) Core Measures Project” NIH Working Group sponsored by NHLBI/NCI/NIDDK/OBSSR,
 February 8-9, 2017, Bethesda, Maryland USA
- 2018 – 2019 Chair, ObesityWeek Program Committee, The Obesity Society
- 2020 – 2022 Chair, Science Development Committee, The Obesity Society
- 2025 – Secretary, ObesityWeek® Board of Directors, The Obesity Society

PROFESSIONAL AFFILIATIONS

- 1999 – The Obesity Society
- 1999 – 2004 American Diabetes Association
- 2000 - American Physiological Society
- 2004 – 2006 American College of Sports Medicine
- 2004 – The Endocrine Society
- 2009 – American Society for Nutrition
- 2012 – American Diabetes Association

HONORS AND AWARDS

- 1987 Eagle Scout, Boy Scouts of America
- 1999 – 2001 Mentor-based Fellowship, American Diabetes Association
- 2002 Research Career Enhancement Award, American Physiological Society
- 2004 – 2007 Career Development (K01) Award, NIH/NIDDK
- 2005 Outstanding Teaching Award, UC Denver Clinical Sciences Program
- 2006 Kern Travel Award, Kern-Aspen Lipid Conference
- 2009 Mead-Johnson Award in Nutrition, American Society of Nutrition
- 2010 PhD Teaching and Research Award, Department of Medicine
- 2016 Outstanding Mentor Award, Colorado Nutrition Obesity Research Center
- 2018 Mentor of the Year, Division of Endocrinology, Metabolism, and Diabetes
- 2021 Outstanding Leadership Award, Colorado Nutrition Obesity Research Center
- 2024 Outstanding Leadership Award, Colorado Nutrition Obesity Research Center

2026 Research Collaboration Team Award (to the Colorado NORC), CU Anschutz Medical Campus

ADMINISTRATIVE SERVICE

Department of Medicine, University of Colorado

2008 – 2019 Research Director, Division of Endocrinology, Metabolism, and Diabetes

School of Medicine, University of Colorado

2010 – 2014 Executive Committee, Colorado Obesity Research Initiative

2011 – 2014 Director, Program on Energy Metabolism, Colorado Obesity Research Initiative

Anschutz Medical Campus, University of Colorado

UC Denver Institutional Animal Care and Use Committee

2003 – Regular Member

2004 – 2006 Violations Subcommittee Chair

2005 – 2006 Chair, Protocol Revision Subcommittee

2006 – Co-Chair

Colorado Nutrition Obesity Research Center (NIH DK048520)

2002 – 2008 Seminar Series Director

2004 – Executive Committee Member

2004 – Associate Director, Energy Balance Laboratory

2004 – 2019 Associate Director, Molecular, Cellular, & Analytical Core

2013 – 2018 Director, NORC Enrichment Program

2015 – 2018 Associate Director

2018 – Director (PI)

Colorado Clinical & Translational Sciences Institute (NIH/NCATS UM1 TR001082)

2012 – 2015 Regular Member, TL1 Predoctoral Training Program

2014 – 2015 Regular Member, PreK Program Review Panel

2014 – 2019 Ad-Hoc Reviewer, K to R Program

2015 – Director, PreK Program

2018 – Associate Director, KL2/K12 Training Program (NIH/NCATS K12 TR004412)

2022 – Associate Director, Pre- and Post-Doctoral T32 programs (NIH/NCATS T32 TR004366, T32 TR004367)

Anschutz Health and Wellness Center

2013 – 2015 Executive Committee

2019 – Director of Research and Education Integration

Advisory Committees

2020 – Barbara Davis Diabetes Center, P30

2023 – Lauren Shomaker K24

2023 – Vicki Catenacci K24

Internal Institutional Grant Review Panels

CCTSI TL1/T32 Fellowship Panel (2010-2016; 2023)

CCTSI KtoR Ad-Hoc Reviewer (2012-2019)

CCTSI PreK Review Panel (2015-present)

Center for Women's Health Research BIRCIWH K12/Pilot Grant Review Panel (2018-present)

CCTSI KL2 Career Development Award Review Panel (2018-present)
 Graduate School NRSA Mock Study Section Panel (2020-present)

Committee Service at Previous Institutions

Intercollegiate Knights Service Fraternity, Brigham Young University

1991 – 1992 Secretary
 1992 – 1993 President, National Executive Council

Doctoral Student Association, East Carolina University BSOM

1996 – 1997 Secretary/Treasurer
 1997 – 1998 President
 1998 – 1999 Executive Council Member

External Committee Service

Washington Nutrition Obesity Research Center

2021 – 2025 External Advisory Board

University of North Carolina Nutrition Obesity Research Center

2021 – External Advisory Board

The Obesity Society

2008 – 2013 Annual Meeting Abstract Reviewer
 2014 – 2015 Program Committee Member, Obesity Week 2015
 2015 – 2016 Program Committee Member, Obesity Week 2016
 Co-Chair, ASMBS-TOS Joint Sessions
 2016 – 2017 Program Committee Member, Obesity Week 2017
 Co-Chair, Metabolism and Integrative Physiology Track
 Co-Chair, ASMBS-TOS Joint Sessions
 2017 – 2018 Co-Chair, Program Committee
 2018 – 2019 Chair, ObesityWeek Program Committee
 Ex Officio Executive Committee Member
 2019 – 2022 Chair, Science Development Committee
 2025 – Secretary, ObesityWeek® Board of Directors

American Society for Nutrition

2014-2016 Independent Meeting Steering Committee
 2022-2023 Mead Johnson Award Juror

Peer Reviewed Publications

Editorial Review Boards

2009 – 2015 American Journal of Physiology- RICP
 2012 – 2017 Frontiers in Physiology, Section on Integrative Physiology

Peer Reviewer

American Journal of Physiology- Regulatory, Integrative, and Comparative Physiology
American Journal of Physiology- Endocrinology and Metabolism
Behavioral Brain Research
Breast Cancer Research
British Journal of Nutrition
Canadian Journal of Physiology and Pharmacology
Diabetes
Endocrinology

Frontiers in Physiology
International Journal of Obesity
Journal of Applied Physiology
Journal of Lipid Research
Journal of Nutrition
Journal of Physiology
Life Sciences
Medicine & Science in Sports & Exercise
Metabolism
Molecular Cancer Therapeutics
Nature Communications
Obesity Research
Physiology and Behavior
PlosONE Biology
PlosONE Medicine

National Institutes of Health, Internal Review Groups

Study Section DDK-B (6/06)
 Study Section ZRG1 EMNR-E10 B (10/08)
 Study Section ZRG1 EMNR-10 K (3/09)
 Study Section ZRG1 EMNR-E10 B (7/09)
 Study Section ZRG1 DKUS-E 53 R (11/09)
 RFA-OD-09-008 BRDG-SPAN and RFA-OD-09-009 Catalyst ARRA Review Panel 3
 Study Section ZRG1 EMNR-E10 B (3/10)
 Study Section ZRG1 EMNR-E10 B (10/10)
 Study Section ZRG1 EMNR-E11 B (3/11)
 Study Section ZRG1 EMNR-E10 B (7/11)
 Study Section ZRG1 EMNR-E10 B (10/11)
 Study Section ZRG1 EMNR-E11 B (11/11)
 Study Section DDK-B (2/12)
 Study Section ZRG1 EMNR-E10 B (2/12)
 Study Section ZRG1 EMNR-E (90) S (7/12)
 Study Section ZRG1 EMNR-E10 B (10/12)
 Study Section ZRG1 IPOD (2/13)
 Study Section ZRG1 EMNR-E10 B (3/13)
 Study Section ZRG1 OTC-C (02) M (5/13)
 Pilot Grant Review Panel, Michigan Nutrition Obesity Research Center (5/13)
 Regular Member, Study Section DDK-B (2013 – 2017 cycle)
 Study Section DDK-B (3/20; 5/20; 10/20; 10/22)
 Study Section ZRG1 OBT-B 55 R (3/20)
 Study Section ZDK1 GRB-G (M4) 1 (3/21)
 Study Section RPHB Special Emphasis Panel (6/21)
 Study Section ZRG1 OTC R (02) M (4/22)
 Study Section ZCA1 SRB-A (0/F1) S (5/23; 2/24)
 Study Section ZCA1 RTR-B (01)R (7/23)
 Study Section CPSS (6/24)

Study Section ZRG1 F09B-X 20 L (4-26)

External Evaluation Committee, Physiology of the Weight Reduced State (POWERS)
Consortium (4/26)

Service in Local Community

Youth Leader, Church of Jesus Christ of Latter-Day Saints (2019 – present)

Chair, Empower Field at Mile High Spring Formal, (2022, 2023, 2024)

Leader (Assistant Scoutmaster) in the Boy Scouts of America (2007 – 2019)

Denver Area Council, Troop/Pack 145 and 740

Youth Soccer Coach, 2 teams/season (2004 – 2013)

Aurora Sports League

RESEARCH PROGRAM HIGHLIGHTS

Interdisciplinary Think-Tanks

My research has focused on the metabolic complications of obesity and therapeutic strategies that facilitate long term weight loss maintenance. In recent years, my efforts have centered on how obesity affects critical aspects of women's health throughout the lifespan, including the development and function of the mammary gland, perinatal programming, the menopausal transition, and risk for breast cancer. I have extensive experience with the measurement of energy balance and fuel utilization in rats, mice, and humans. My research takes an integrative perspective on the wealth of knowledge generated from mechanistic basic science studies of energy balance and serves as a translational bridge for this information to improve our understanding of human physiology. My work and reputation are known within the scientific community to the extent that I have been invited to participate in a number of interdisciplinary reviews, working groups, and think-tanks, which attempt to further our understanding of overnutrition, its metabolic complications, and the most effective strategies to prevent and treat its associated disease pathologies.

- a) Heitmann BL, Westerterp KR, Loos RJF, Sørensen TIA, O' Dea K, **MacLean PS**, Jensen TK, Eisenmann J, Speakman JR, Simpson SJ, Reed DR, Westerterp-Plantenga MS. Obesity: Lessons from evolution and the environment. *Obesity Rev* 13(10):910-922, 2012.
- b) **MacLean PS**, Wing RR, Davidson T, Epstein L, Goodpaster B, Hall KD, Levin BE, Perri MG, Rolls BJ, Rosenbaum M, Rothman AJ, Ryan D. NIH working group report: Innovative research to improve maintenance of weight loss. *Obesity* 23(1):7-15, 2015.
- c) **MacLean PS**, Blundell JE, Mennella JA, Batterham RL. Biological Control of Appetite: A Daunting Complexity. *Obesity Suppl* 1:S8-S16, 2017.
- d) **MacLean PS**, Rothman AJ, Nicastro HL, Czajkowski SM, Agurs-Collins T, Rice EL, Courcoulas AP, Ryan DH, Bessesen DH, Loria CM. The Accumulating Data to Optimally Predict Obesity Treatment (ADOPT) Core Measures Project: Rationale and Approach. *Obesity Suppl* 2: S6-S15, 2018.
- e) Rosenbaum M, Agurs-Collins T, Bray MS, Hall KD, Hopkins M, Laughlin M, **MacLean PS**, Maruvada P, Savage CR, Small DM, Stoeckel L. Accumulating Data to Optimally Predict Obesity Treatment (ADOPT): Recommendations from the Biological Domain. *Obesity Suppl* 2:S25-S34, 2018.
- f) Martin SL, Cardel MI, Carson TL, Hill JO, Stanley T, Grinspoon S, Steger F, Blackman Carr LT, Ashby-Thompson M, Stewart D, Ard J; **Nutrition Obesity Research Center Taskforce*** to Advance the Careers of Researchers from Groups Underrepresented in Academia; Stanford FC. Increasing diversity, equity, and inclusion in the fields of nutrition and obesity: A roadmap to equity in academia. *Am J Clin Nutr* 117(4):659-671, 2023. *PS MacLean was a member of this task force.

Biological Drive to Regain Weight After Weight Loss

Over the past two decades, I have published a series (30+) papers focused on the biological drive to regain weight after weight loss. I developed an experimental paradigm of weight regain after weight loss utilizing rats and mice with a polygenic/epigenetic predisposition for obesity when challenged with an obesogenic environment (a high fat diet and limitations of physical activity). Some of my studies pursued a better understanding of the underlying metabolic characteristics that explain their predisposition to gain weight, while others examined related questions after calorie restricted weight loss. I utilized this paradigm of weight regain to characterize the metabolic adaptations to weight loss and their role in driving weight regain. I employed *in vivo* nutrient tracers in combination with indirect calorimetry to show that obesity-prone rats have an inherent impairment in fat oxidation, how this is exacerbated after weight loss, and how the suppression of dietary fat oxidation facilitates weight regain. More recently, I have leveraged these observations to the interpretation of clinical studies of weight loss and weight loss maintenance.

- a. **MacLean PS**, Bergouignan A, Cornier M, Jackman MR. Biology's response to dieting: the impetus for weight regain. *Am J Physiol Regul Integr Comp Physiol* 301(3):R581-600, 2011.
- b. Higgins JA, Brown IL, Johnson GC, Jackman MR, Steig A, Wyatt HR, Melanson EL, Hill JO, **MacLean PS**. Resistant starch and exercise independently attenuate weight regain on a high fat diet in a rat model of obesity. *Nutri Metabolism* 8:49(pg 1-15), 2011.
- c. **MacLean PS**, Sherk V, Giles EG, Higgins JA, Jackman MJ. A role for adipose tissues in weight regain. *Obesity Rev* 16 Suppl 1:45-54, 2015.
- d. Ostendorf DM, Melanson EL, Caldwell AE, Creasy SA, Pan Z, **MacLean PS**, Wyatt HR, Hill JO, Catenacci VA. No consistent evidence of a disproportionately low resting energy expenditure in long-term successful weight loss maintainers. *Am J Clin Nutr* 108(4):658-666, 2018.
- e. Hill EB, Konigsberg IR, Ir D, Frank DN, Jambal P, Litkowski EM, Lange EM, Lange LA, Ostendorf DM, Scorsone JJ, Wayland L, Bing K, **MacLean PS**, Melanson EL, Bessesen DH, Catenacci VA, Stanislowski MA, Borengasser SJ. The Microbiome, Epigenome, and Diet in Adults with Obesity during Behavioral Weight Loss. *Nutrients* 15(16):3588, 2023.
- f. Catenacci VA, Ostendorf DM, Pan Z, Kaizer LK, Creasy SA, Zaman A, Caldwell AE, Dahle J, Swanson B, Breit MJ, Bing K, Wayland LT, Panter SL, Scorsone JJ, Bessesen DH, **MacLean P**, Melanson EL. The Effect of 4:3 Intermittent Fasting on Weight Loss at 12 Months : A Randomized Clinical Trial. *Ann Intern Med.* 2025 Apr 1. doi: 10.7326/ANNALS-24-01631. Online ahead of print. PMID: 40163873

Exercise and the Prevention of Weight Regain

Extending the experimental paradigm to the realm of therapeutics, I examined how regular exercise affected the biological drive to regain lost weight. Exercise has proven to be one of the most effective strategies in humans for successful weight loss maintenance, and a number of researchers had suggested that its beneficial effects were tied to its effects on metabolism. My work was the first to show that after energy-restricted weight loss, regular exercise attenuated weight regain by reducing appetite and increasing expended energy above and beyond the energetic cost of the exercise bout. Furthermore, I used indirect calorimetry in combination with *in vivo* nutrient tracers to provide evidence that exercise promotes the oxidation of ingested fat and the diversion of ingested carbohydrate through hepatic *de novo* lipogenesis before its storage in adipose tissue. As such, this was the first evidence that regular exercise demanded more energy for weight regain by trafficking excess energy through energetically expensive metabolic pathways of lipid deposition. I subsequently showed that these beneficial effects of exercise were greatly diminished when regain occurred with overfeeding on a high fat diet. More recently, we have begun to study the underlying mechanisms of sex-specific differences in these beneficial effects on appetite and expended energy.

- a) Steig AJ, Jackman MR, Giles ED, Higgins JA, Johnson GC, Mahan C, Melanson EL, Wyatt HR, Eckel RH, Hill JO, **MacLean PS**. Exercise reduces appetite and traffics excess nutrients away from energetically efficient pathways of lipid deposition during the early stages of weight regain. *Am J Physiol Regul Integr Comp Physiol* 301(3): R656-667, 2011.
- b) Foright RM, Presby DM, Sherk VD, Kahn D, Checkley LA, Giles ED, Bergouignan A, Higgins JA, Jackman MR, Hill JO, **MacLean PS**. Is regular exercise an effective strategy for weight loss maintenance? *Physiol Behav* 188:86-93, 2018.
- c) Sherk VD, Jackman MR, Higgins JA, Giles ED, Foright RM, Presby DM, Carpenter RD, Johnson GC, Oljira R, Houck JA, **MacLean PS**. Impact of Exercise and Activity on Weight Regain and Musculoskeletal Health PostOVX. *Med Sci Sports Exerc* (12):2465-2473, 2019.
- d) Presby DM, Checkley LA, Jackman MR, Higgins JA, Jones KL, Giles ED, Houck JA, Webb PG, Steig AJ, Johnson GC, Rudolph MC, **MacLean PS**. Regular exercise potentiates energetically expensive hepatic de novo lipogenesis during early weight regain. *Am J Physiol Regul Integr Comp Physiol.* 317(5):R684-R695, 2019.
- e) Foright RM, Johnson GC, Kahn D, Charleston CA, Presby DM, Bouchet CA, Wellberg EA, Sherk VD, Jackman MR, Greenwood BG, **MacLean PS**. Compensatory eating behaviors in male and female rats in response to exercise training. *Am J Physiol Regul Integr Comp Physiol* 319(2):R171-R183, 2020.
- f) Presby DM, Rudolph MC, Sherk VD, Jackman MR, Foright RM, Jones KL, Houck JA, Johnson GC, Higgins JA, Neuffer PD, Eckel RH, **MacLean PS**. Lipoprotein Lipase Overexpression in Skeletal Muscle Attenuates Weight Regain by Potentiating Energy Expenditure. *Diabetes* 70(4):867-877, 2021.

Metabolic Disease, the Menopausal Transition, and Postmenopausal Breast Cancer

Over the past decade, I have published a series of papers utilizing female preclinical DIO models to study the sex-specific effects of the DIO phenomenon and the effects of pre-existing obesity on the metabolic consequences of the loss of ovarian function. I published the first paper in a DIO model that measured intake, expenditure, and fuel utilization, across the estrus cycle and after the loss of ovarian function. Our team showed that obesity extended the positive energy imbalance in proestrus, magnified the negative energy imbalance that occurs during estrus, and blunted the positive energy imbalance in response to the loss of ovarian function. Merging the models of obesity (DIO), menopause (surgical ovariectomy), and breast cancer (n-methylnitrosourea), we pursued a better understanding of the tumor promoting effects of obesity after the loss of ovarian function. Our studies employed *in vivo* tracers in combination with indirect calorimetry to show that the positive energy imbalance and obesity-associated metabolic dysregulation converge to promote survival and growth of tumors. More recently, we have contributed to the development of a novel DIO xenograft model for use with patient-derived breast tumors (PDX) to study the molecular mechanisms of obesity-associated mammary tumor promotion and endocrine therapy resistance.

- a) Giles ED, Wellberg EA, Astling DP, Anderson SM, Thor AD, Jindal S, Tan AC, Schedin PS, **MacLean PS**. Obesity and overfeeding affecting both tumor and systemic metabolism activates the progesterone receptor to contribute to postmenopausal breast cancer. *Cancer Res* 15;72(24):6490-501, 2012. (Cover Article)
- b) Checkley LA, Rudolph MC, Wellberg EA, Giles ED, Wahdan-Alaswad RS, Houck JA, Edgerton S, Thor AD, Schedin P, Anderson S, **MacLean PS**. Metformin Accumulation Correlates with Organic Cation Transporter 2 Protein Expression and Predicts Mammary Tumor Regression *In Vivo*. *Cancer Prev Res* 10(3):198-207, 2017.
- c) Wellberg EA, Checkley LA, Giles ED, Johnson SJ, Oljira R, Wahdan-Alaswad RS, Foright RM, Dooley G, Edgerton SM, Jindal S, Johnson GC, Richer JK, Kabos P, Thor AD, Schedin P, **MacLean PS**^a, Anderson SM^a. The Androgen Receptor supports tumor progression after the loss of ovarian function in a preclinical model of obesity and breast cancer. *Horm Cancer* 8(5-6):269-285, 2017. (Cover Article) ^a*co-senior authors*
- d) Wellberg EA, Kabos P, Gillen AE, Jacobsen BM, Brechbuhl HM, Johnson SJ, Rudolph MC, Edgerton SM, Thor AD, Anderson SM, Elias A, Zhou XK, Iyengar NM, Morrow M, Falcone DJ, El-Hely O, Dannenberg AJ, Sartorius CA, **MacLean PS**. FGFR1 underlies obesity-associated progression of ER-positive breast cancer after estrogen deprivation. *JCI Insight* 3(14)pii 120594, 2018.
- e) Wellberg EA, Corleto KA, Checkley LA, Jindal S, Johnson G, Higgins JA, Obeid S, Anderson SM, Thor AD, Schedin PJ, **MacLean PS**^a, Giles ED^a. Preventing ovariectomy-induced weight gain decreases tumor burden in rodent models of obesity and postmenopausal breast cancer. *Breast Cancer Res* 24(1):42, 2022. ^a*co-senior authors*
- f) Libby AE, Solt C, Jackman M, Sherk V, Foright RM, Johnson GC, Nguyen TT, Breit M, Hulett N, Rudolph M, Roberson PA, Wellberg E, Jambal P, Scalzo RL, Higgins J, Kumar TR, Wierman ME, Pan Z, Shankar K, Klemm DJ, Moreau KL, Kohrt WM, **MacLean PS**. Effects of Follicle Stimulating Hormone on Energy Balance and Tissue Metabolic Health After Loss of Ovarian Function. *Am J Physiol Endocrinol Metab* 326(5):E626-E639, 2024.

Obesity, Mammary Gland Development, and Lactation

In collaboration with a number of mammary gland biologists, I have utilized the DIO models and an innovative approach of combining *in vivo* nutrient tracers with indirect calorimetry to examine how obesity and high fat feeding effect maternal energy balance, milk production, and nutrient metabolism in nursed offspring. We were the first to show distinct effects of maternal high fat feeding and maternal obesity on lactation performance and offspring metabolism. The high fat diet programmed offspring with a high energy demand and an accelerated growth rate during lactation, while maternal obesity was accompanied by a lactation impairment that prevented the dam from meeting the higher energy demand. Most recently, we extended the physiological relevance of these finding in a clinical study that showed that altered milk lipid composition was associated with the change in infant adiposity. My studies have pursued the underlying cause of the obesity-associated lactation impairment and its consequences for postnatal metabolic programming of

disease. I believe the impairment is linked to blunted insulin signaling in the developing mammary gland during gestation.

- a. Wahlig JL, Bales ES, Jackman MR, Johnson GC, McManaman JL, **MacLean PS**. Impact of high fat diet and obesity on energy balance and fuel utilization during the metabolic challenge of lactation. *Obesity* 20(1):65-75, 2012.
- b. Neville MC, Webb P, Ramanathan P, Mannino MP, Pecorini C, Monks J, Anderson SA, **MacLean PS**. The insulin receptor plays an important role in secretory differentiation in the mammary gland. *Am J Physiol Endo Metab* 305(9):E1103-14, 2013.
- c. Rudolph MC, Jackman MR, Presby DM, Houck JA, Webb PG, Johnson GC, Soderborg TK, de la Houssaye BA, Yang IV, Friedman JE, **MacLean PS**. Low neonatal plasma n-6/n-3 PUFA ratios regulate offspring adipogenic potential and condition adult obesity resistance. *Diabetes* 67(4):651-661, 2018.
- d. Martin Carli JF, Trahan GD, Jones KL, Hirsch N, Rolloff KP, Dunn EZ, Friedman JE, Barbour LA, Hernandez TL, **MacLean PS**, Monks J, McManaman JL, Rudolph MC. Single Cell RNA Sequencing of Human Milk-Derived Cells Reveals Sub-Populations of Mammary Epithelial Cells with Molecular Signatures of Progenitor and Mature States: a Novel, Non-invasive Framework for Investigating Human Lactation Physiology. *J Mammary Gland Biol Neoplasia* 25(4):367-387, 2021.
- e. Young BE, Kyere-Davies G, Farriester JW, Varshney R, **MacLean PS**, Krebs NF, Rudolph MC. Infant Red Blood Cell Arachidonic to Docosahexaenoic Acid Ratio Inversely Associates with Fat-Free Mass Independent of Breastfeeding Exclusivity. *Nutrients* 14(20):4238, 2022.
- f. Varshney R, Das S, Trahan GD, Farriester JW, Mullen GP, Kyere-Davies G, Presby DM, Houck JA, Webb PG, Dzieciatkowska M, Jones KL, Rodeheffer MS, Friedman JE, **MacLean PS**, Rudolph MC. Neonatal intake of Omega-3 fatty acids enhances lipid oxidation in adipocyte precursors. *iScience* 26(1):105750, 2022.

Transdisciplinary Research on Energy Balance and Obesity

As Director of the Colorado Nutrition & Obesity Research Center's (NORC), I facilitate work in the broader research enterprise through the NORC's Energy Balance Assessment and Molecular & Cellular Analytical cores. I focus my efforts on fostering interdisciplinary and translational research collaborations that study the regulation of energy expenditure and energy balance. In the context of these responsibilities, I regularly collaborate with internal and external scientists and have applied my expertise in metabolic phenotyping, the use of in vivo nutrient tracers, and models of obesity, in order to further our understanding of the regulation of energy balance and the metabolic complications of obesity.

- a. Lanaspá-García MA, Kuwabara M, Andres-Hernando A, Li N, Cicerchi C, Jensen T, Orlicky DJ, Roncal-Jimenez CA, Ishimoto T, Nakagawa T, Rodriguez-Iturbe B, **MacLean PS**, Johnson RJ. High salt intake causes leptin resistance and obesity in mice by stimulating endogenous fructose production and metabolism. *Proc Natl Acad Sci USA* 115(12):3138-3143, 2018.
- b. Perreault L, Newsom SA, Strauss A, Kerege A, Kahn DE, Harrison KA, Snell-Bergeon JK, Nemkov T, D'Alessandro A, Jackman MR, **MacLean PS**, Bergman BC. Intracellular localization of diacylglycerols and sphingolipids influences insulin sensitivity and mitochondrial function in human skeletal muscle. *JCI Insight* 8;3(3) e96805, 2018.
- c. Hopp K, Catenacci VA, Dwivedi N, Kline TL, Wang W, You Z, Nguyen DT, Bing K, Poudyal B, Johnson GC, Jackman MR, Miller M, Steele CN, Serkova NJ, **MacLean PS**, Nemenoff RA, Gitomer B, Chonchol M, Nowak KL. Weight loss and cystic disease progression in autosomal dominant polycystic kidney disease. *iScience* 25(1):103697, 2021.
- d. Gavin KM, Sullivan TM, Maltzahn JK, Jackman MR, Libby AE, **MacLean PS**, Kohrt WM, Majka SM, Klemm DJ. Hematopoietic Stem Cell-Derived Adipocytes Modulate Adipose Tissue Cellularity, Leptin Production and Insulin Responsiveness in Female Mice. *Front Endocrinol (Lausanne)* 13:844877, 2022.
- e. Kahn D, Macias E, Zarini S, Garfield A, Zemski Berry K, **MacLean P**, Gerszten RE, Libby A, Solt C, Schoen J, Bergman BC. Exploring Visceral and Subcutaneous Adipose Tissue Secretomes in Human Obesity: Implications for Metabolic Disease. *Endocrinology* 163(11):bqac140, 2022.
- f. Gilley SP, Zarate MA, Zheng L, Jambal P, Yazza DN, Chintapalli SV, **MacLean PS**, Wright CJ, Rozance PJ, Shankar K. Metabolic and fecal microbial changes in adult fetal growth restricted mice. *Pediatr Res* 95(3):647-659, 2024.

[Publications for PS MacLean](#)

INVITED PRESENTATIONS

External Invitations (Plenaries, Conferences, and Meetings Extending Beyond CU, 92)

**denotes speaking engagements outside of the United States or with an international audience*

1. SREBP expression in skeletal muscle: novel approach to studying the functional aspects of skeletal muscle gene expression in vivo. Proctor & Gamble Weight Management Collaborative Event, Houston Woods, 2002.
2. Sterol response element binding proteins in skeletal muscle. Atorvastatin Research Awards Summit, Salt Lake City, 2003.
3. In vivo adenoviral gene delivery to skeletal muscle. Atorvastatin Research Awards Summit, Phoenix, 2004.
4. Tips for successful grant writing. Utah Valley State College, Orem, 2004.
5. Metabolic pressures driving weight regain. Research seminar, University of Colorado, Boulder, 2005.
6. Metabolic mountains on the road to long term weight reduction. Nutrition Seminar, Colorado State University, Fort Collins, 2005.
7. Countering the metabolic drive to regain weight with exercise. Rocky Mountain American College of Sports Medicine, Estes Park, 2006.
8. Skeletal muscle metabolism and weight regain. Division of Health and Human Performance Seminar Series, Pennington Biomedical Research Center, Baton Rouge, 2006
9. Why is it so hard to keep weight off after weight loss? 28th Annual Lillian Fountain Smith Conference for Nutrition Educators, Fort Collins, 2006.
10. Metabolic flexibility and the propensity to regain weight. Department of Integrative Physiology Colloquium, University of Colorado at Boulder, 2006.
11. Attenuating the metabolic drive to regain weight with regular exercise. Department of Nutrition and Exercise Science Seminar, University of Missouri, Columbia, 2007.
12. Metabolic flexibility and weight regain. American Chemical Society, Boston, 2007.
13. Mathematical considerations for indirect calorimetry. Recent Advances and Controversies in the Measurement of Energy Metabolism, Denver, 2008.
14. *Weight regain and adipocytes hyperplasia. 10th Benjamin Franklin Lafayette Seminar, Frejus, France, 2009.
15. Countering the biological drive to regain weight with regular exercise. FASEB Summer Research Conference- The Physiological Basis for Obesity Therapeutics. Snowmass, Colorado, 2009.
16. *The impact of cereals on energy metabolism and health. The Royal Australian Chemical Institute (RACI), Melbourne, Australia, 2010.
17. Countering the metabolic drive to regain weight with exercise. Society for the Study of Ingestive Behavior (SSIB), Pittsburgh, 2010.
18. Countering the biological drive to regain weight with exercise. Center for Human Nutrition Seminar Series, University of Arkansas Medical School, Little Rock, 2010.
19. Metabolic Impact of Exercise on Weight Regain After Weight Loss. American College of Sports Medicine, Denver, 2011.
20. *Maternal Obesity Impairs Lactation and Produces Offspring with Enhanced Metabolic Efficiency. 11th Benjamin Franklin Lafayette Seminar, Frejus, France, 2011.
21. *Exercise traffics excess nutrients away from energetically efficient pathways of lipid deposition during weight regain. 2nd Conference on Recent Advances and Controversies in the Measurement of Energy Metabolism (RACMEM), Maastricht, The Netherlands, 2011.

22. *Maternal Obesity Impairs Lactation and Produces Offspring with Enhanced Metabolic Efficiency. 9th Stock Conference on Obesity: Lessons from Evolution and the Environment. International Association for the Study of Obesity, Budapest, Hungary, 2011.
23. Poor Nutrition and Maternal Obesity: consequences for lactation and the metabolic health of offspring. Conference on Milk and Lactation, Aurora, 2012.
24. Countering the Biological Drive to Regain Weight with Exercise. Food Science & Nutrition Seminar Series, Brigham Young University, Provo, 2012.
25. Metabolic Programming and Maternal Obesity. Biology 100 Visiting Professor Lecture, Brigham Young University, Provo (UT), 2012.
26. An exercise a day keeps weight regain at bay. 34th Annual Lillian Fountain Smith Conference for Nutrition Educators, Fort Collins, 2012.
27. Countering the Biological Drive to Regain Weight with Exercise. Exercise and Nutrition Sciences Seminar Series, University of Buffalo, Buffalo, 2013.
28. Obesity at Menopause: Metabolic Consequences Affecting Breast Cancer Risk. Cancer Center Seminar Series, University of Alabama Birmingham, Birmingham, 2013.
29. Energy Balance and Fuel Utilization in Women's Health and Disease. Department of Nutrition and Exercise Science Seminar, University of Missouri, Columbia, 2013.
30. Biology's response to dieting: adaptations driving weight regain. Biological Responses to Weight Loss and Weight Regain, American Diabetes Association Symposia, Bethesda, 2013.
31. Obesity at Menopause: Metabolic Consequences Affecting Breast Cancer Risk. Cancer Center Seminar Series, Georgia Health Sciences University, Augusta, 2013.
32. *Obesity and overfeeding converge to promote mammary tumor survival and growth after the loss of ovarian function. 12th Benjamin Franklin Lafayette Seminar, Frejus, France, 2013.
33. *Adipose tissue metabolism/adipose tissue plasticity in response to weight loss/weight regain. 7th Fribourg Obesity Research Conference (FORC-2013): Pathways from dieting to weight regain, to obesity and to the metabolic syndrome. Fribourg, Switzerland, 2013.
34. *Impact of obesity on postmenopausal breast cancer. Department of Cell Biology Seminar Series, University of Groningen, Groningen, The Netherlands, 2013.
35. *A role for adipose tissue in weight regain after weight loss. Center for Metabolic Research, University of Groningen, Groningen, The Netherlands, 2013.
36. Physiological Challenges: Summary and Discussion. Innovative Research to Improve Maintenance of Weight Loss, NIH Working Group Meeting, Bethesda, 2014.
37. Summary, Wrap-Up, and Next Steps. Innovative Research to Improve Maintenance of Weight Loss, NIH Working Group Meeting, Bethesda, 2014.
38. *Obesity's impact on lactation: consequences for energy balance and postnatal programming. Recent Advances and Controversies in the Measurement of Energy Metabolism (RACMEM), Tokyo, Japan, 2014.
39. Hormonal and Incretin Regulation of Appetite - Implications for Weight Management. American Diabetes Association Symposia on Appetite Regulation, Boston, 2015.
40. *Exercise Enhances the Capacity for De Novo Lipogenesis in the Liver During Weight Regain After Weight Loss. 13th Benjamin Franklin Lafayette Seminar, Frejus, France, 2015.
41. Hormonal Regulation of Appetite. NIH Working Group on Self-Regulation of Appetite – It's Complicated. Bethesda, MD, 2015.
42. Innovative Research to Improve Maintenance of Weight Loss. American Society of Bariatric Physicians Symposia, Washington D.C., 2015.
43. Physiological and Behavioral Challenges to Weight Loss Maintenance. Obesity Week, Los Angeles, 2015.
44. *Using Mouse Models in Basic Research Studies of Lactation. Pre-Meeting Basic Research Workshop, International Society for Research in Human Milk and Lactation, Stellenbosch (South Africa), 2016.

45. *Impact of Maternal Obesity on Mammary Gland Development and Lactation. International Society for Research in Human Milk and Lactation, Stellenbosch (South Africa), 2016.
46. Exercise, Adipose Tissue, and Weight Regain. Annual Meetings of the American College of Sports Medicine, Boston, MA, 2016.
47. Challenges for Weight Loss Maintenance: On the Road to Personalized Medicine in Obesity Therapeutics. Annual Nutrition Symposium, Graduate Program in Nutrition Sciences, University of Illinois at Urbana, Urbana, IL, 2016.
48. But Can They Keep it Off? Innovative Tools for Weight Loss Maintenance. Weight Management Symposia, Academy of Nutrition and Dietetics, Baltimore, MD, 2016.
49. Impact of maternal obesity on lactation: finding clinical relevance with mouse models. 4th Annual International Conference on Human Milk Science and Innovation, Pasadena, CA, 2016.
50. Determinants and challenges of personalized obesity treatments. International Life Science Institute Annual Meeting, La Jolla, CA, 2017.
51. The ADOPT Core Measures Project. NORC Director's Annual Meeting, Aurora, CO, 2017.
52. Colorado NORC Enrichment Program/Energy Balance Core, NORC Director's Annual Meeting, Aurora, CO, 2017.
53. *Impact of exercise on appetite and energy expenditure during weight regain. 14th Benjamin Franklin Lafayette Seminar, Frejus, France, 2017.
54. Obesity and Women's Health: Pursuing the Basics Through Translation. Pennington Biomedical Research Center Seminar, Baton Rouge, 2017.
55. *Defining Metabolic (In)flexibility Amid Literature Confusions: Moving Toward Practical Applications. Recent Advances and Controversies in Measuring Energy Metabolism (RACMEM), Fribourg (Switzerland), 2017.
56. Merging models for menopause: a tumor's tale of two... mammary glands. ObesityWeek 2017, Washington D.C., 2017.
57. Obesity and Women's Health: Pursuing the Basics Through Translation. Department of Nutrition Sciences Seminar Series, University of Alabama Birmingham, Birmingham, 2018.
58. Countering the biological drive to regain weight with exercise. Institute for Diabetes, Obesity, & Metabolism Seminar Series, University of Pennsylvania, Philadelphia, 2018.
59. Maternal obesity: postnatal programming adipose tissues for metabolic disease. Biomedical Research Training Program Keynote Address, University of Kansas Medical Center, 2018.
60. On the Horizon: The Science Behind a Personalized Approach to Obesity Care. Your Weight Matters National Convention, Denver, 2018.
61. Exercise, individual variability, and weight loss maintenance. National Conference on Women's Health & Sex Differences Research: Sex Differences Across the Lifespan: A Focus on Metabolism, Denver, 2018.
62. Perinatal Impact of Maternal Obesity on Adipogenic Potential. NORC Symposium, Annual Meeting of the Obesity Society (ObesityWeek). Nashville TN, 2018.
63. TOS/NIH ADOPT Core Measures Info Session: How You Can Get Involved. Annual Meeting of the Obesity Society (ObesityWeek). Nashville TN, 2018.
64. Obesity and Women's Health: Pursuing the Basics Through Translation. Department of Pharmacology and Nutrition Sciences Seminar Series, University of Kentucky College of Medicine, Lexington, 2018.
65. Merging models for menopause: a tumor's tale of two... mammary glands. Nutrition Seminar Series, University of Alabama Birmingham, Washington D.C., 2019.
66. Exercise, individual variability, and weight loss maintenance. Diabetes Obesity Research Institute, University of Southern California, Los Angeles, 2019.
67. How to fund and implement ADOPT Core Measures in your adult weight loss trial. Online webinar sponsored by the American Society for Nutrition, [ASN Recorded Webinar on ADOPT](#), 2019.

68. Debate: What is the role of exercise in weight loss and weight loss maintenance? Physiology of the Weight Reduced State, NIH/NIDDK Working Group, Bethesda, 2019.
69. Overview and Rationale for the ADOPT (Accumulating Data to Optimally Predict Obesity Treatment) Core Measures Project. Nutrition 2019, Baltimore, 2019.
70. *Sex-specific differences in appetite regulation in response to exercise training. 15th Benjamin Franklin Lafayette Seminar, Frejus, France, 2019.
71. The ADOPT Core Measures Project: Overview and Rationale. Trans-NIH Consortium: Randomized Controlled Trials of Lifestyle Weight Loss Interventions for Genome-Wide Association Studies, NCI Shady Grove Campus, Rockville Pike, MD, 2019.
72. Exercise, individual variability, and weight loss maintenance. Frontiers in Obesity, Diabetes, and Metabolism. University of Iowa Carver College of Medicine, Iowa City, 2020.
73. Maternal Obesity: Postnatal programming adipose tissues for metabolic disease. Mattioli Endowed Lecture in Pediatric Cardiology, University of Kansas Medical School, Kansas City, KS, 2020.
74. Exercise, individual variability, and weight loss maintenance. University of Nebraska, Nebraska Center for the Prevention of Obesity Diseases, Lincoln (Virtual), 2020.
75. *Initial steps toward targeted obesity treatments. European and International Congress on Obesity (ECO-ICO), Research Methodologies Workshop: OBEDIA Core Variables Project, Dublin (Virtual Congress), 2020.
76. Exercise, individual variability, and weight loss maintenance. East Carolina University's Brody School of Medicine, Department of Anatomy and Cell Biology Seminar Series, Greenville (Virtual), 2021.
77. Preclinical Metabolic Phenotyping Systems. NORC-NIH Joint Indirect Calorimetry Working Group, (Virtual) 2021.
78. Exercise, individual variability, and weight loss maintenance. University of Georgia, Department of Nutritional Sciences Seminar Series, Athens (Virtual), 2021.
79. Exercise, Individual Variability, and Weight Loss Maintenance. Department of Nutrition Seminar Series, College Station (in person), 2021.
80. *A dual-tracer approach to measure the effect of exercise on energy expenditure and de novo lipogenesis during weight regain. Columbus Instruments Obesity Techniques Webinar [APS Recorded Webinar Link](#), sponsored by the American Physiological Society – Endocrinology & Metabolism Section (Virtual webinar, with international audience documented), 2022.
81. *Cancer Metabolism: Merging Models for Menopause and Cancer. International Thyroid Oncology Group Annual Meeting (virtual), 2022.
82. *Thermogenic flexibility in response to weight loss and regain. Recent Advances and Controversies in the Measurement of Energy Metabolism (RACMEM), Quebec City, 2022.
83. Physiology of the weight reduced state: from mechanisms to clinical application. ObesityWeek – The Annual Meetings of The Obesity Society, San Diego, 2022.
84. Effect of Follicle Stimulating Hormone on Energy Balance and Tissue Metabolic Health After Loss of Ovarian Function. NIH Office of Research on Women's Health (ORWH) Annual Meetings, Virtual/Washington DC, 2022.
85. *Sex-specific differences with exercise in appetite regulation. 16th Benjamin Franklin Lafayette Seminar, Frejus, France, 2023.
86. Metabolic Flexibility to Weight Loss. American Diabetes Association 83rd Scientific Sessions, San Diego, 2023.
87. Estrogen in the periphery in energy balance. ObesityWeek 2023, the Annual Meetings for The Obesity Society, Dallas, 2023.
88. Merging models to advance our understanding of obesity and cancer. Web of Life Conference, University of Oklahoma Health Sciences Center, Oklahoma City, 2024.
89. *Sex-specific differences with exercise in weight loss maintenance. 17th Benjamin Franklin Lafayette Seminar, Frejus, France, 2025.

90. Exercise, Individual Variability, and Weight Loss Maintenance. NORC Mini-Symposium, University of Texas Southwestern Touchstone Diabetes Center, Dallas, 2026.
91. A Biological Role for Exercise in Weight Loss Maintenance. Department of Nutrition, Dietetics and Food Science Seminar Series, Brigham Young University, Provo, 2026.
92. Sex-specific effects of exercise on appetite during weight regain after weight loss. Annual SCORE Meeting, the Specialized Centers of Research Excellence on Sex Differences, NIH Office of Women's Health Research, Bethesda, 2026.

Internal Invitations – University of Colorado Anschutz Medical Campus (66)

1. Determination of Lipid and Lipoprotein Profiles by NMR Spectroscopy. UC Denver Young Investigators Meeting, Denver, 2001.
2. AMP activated protein kinase: Does it mediate exercise-induced changes in gene expression? UC Denver Center for Human Nutrition Seminar Series, Denver, 2001.
3. Metabolic analyses in rats with energy imbalances. UC Denver Young Investigators Meeting, 2002.
4. Black holes and weight reduced rats: where does the energy go? UC Denver Young Investigator's Meeting, Denver, 2004.
5. Metabolic mountains on the road to successful weight maintenance. UC Denver Center for Human Nutrition Seminar Series, Denver, 2004.
6. Metabolic propensity to regain weight after weight loss. Endocrinology Research Conference, Aurora, 2005.
7. Traversing the metabolic mountains on the road to sustained weight loss. UC Denver Center for Human Nutrition Seminar Series, Denver, 2005.
8. Why is it so hard to keep weight off after weight loss? Pediatric Obesity Seminar Series, The Children's Hospital, Denver, 2005.
9. Obesity and postmenopausal breast cancer. UC Denver Young Investigator's Meeting, Denver, 2005.
10. Skeletal muscle metabolism and obesity recidivism. Physiology and Biophysics Seminar Series, UC Denver, 2006.
11. Metabolic pathways. Women's Health Investigators Network Forum, UC Denver, Aurora, 2006.
12. Modeling metabolic aspects of anorexia nervosa in animals. Center for Human Nutrition Seminar Series, UC Denver, Denver, 2007.
13. Metabolic flexibility and the propensity to regain weight – A tale of two tissues. Pathology Grand Rounds, UC Denver, Aurora, 2007.
14. A metabolic mindset for obesity therapeutics. Endocrinology Grand Rounds, UC Denver, Aurora, 2007.
15. Adaptations to energy restriction. Department of Medicine Research Conference, UC Denver, Denver, 2008.
16. A model to study obesity and postmenopausal breast cancer. Nutrition & Metabolism Interest Group, Aurora, 2008.
17. Obesity and Breast Cancer. Program in Reproductive Biology- Functional Development of the Mammary Gland, Aurora, 2009.
18. Energy balance in preclinical research. Faculty Research Seminars, Center for Comparative Medicine, Aurora, 2009.
19. Exercise and Weight Regain Prevention. Endocrine Research Conference. Aurora, 2009.
20. Metabolic inflexibility: the link between obesity and postmenopausal breast cancer. Cancer Center Seminar Series, Aurora, Colorado, 2009.
21. Obesity, metabolic dysregulation, and postmenopausal breast cancer. Mammary Gland Development PPG Retreat, Aurora, Colorado, 2010.
22. Adipose Tissue Cellularity: Discussion of Methodologies. Metabolism Interest Group, Aurora, 2010.
23. Countering biology's drive to regain weight after weight loss with exercise. Nutrition and Preventative Health Student Interest Groups, Aurora, 2011.
24. An Exercise a day keeps weight regain at bay. Endocrinology Grand Rounds, University of Colorado SOM, Aurora, 2011.

25. Colorado Obesity Research Initiative: Building Bridges With the Cancer Research Community. University of Colorado Cancer Center Seminar Series, Aurora, 2012.
26. Linking Fuel Preference to Energy Balance in Mice and Man. University of Colorado SOM Department of Medicine Research and Innovations Conference, Aurora, 2012.
27. Changing IACUC Policies and Procedures: What are the practical consequences for your research program? Endocrine Research Conference, Aurora, 2012.
28. Obesity, Mammary Gland Development, and Lactation. Mammary Gland Biology Program Project Retreat, Aurora, 2013.
29. Promoting Interdisciplinary Collaboration in Obesity Research: Preclinical and Basic Science Cores. Anschutz Health and Wellness Symposium on Obesity, Aurora, 2013.
30. Maternal obesity, lactation, and the potential consequences for neonatal metabolic programming. Pathology Grand Rounds, Aurora, 2014.
31. Special Center for Research: Project II Update. Aurora, 2014.
32. Metabolic disease, mammary gland development, and lactation. Mammary Gland Program Project Retreat, Aurora, 2014.
33. Is exercise a reasonable strategy for weight loss maintenance? Integrative Physiology Seminar Series, Aurora, 2015.
34. Topics in Career Development. Career Development Meeting, Division of Endocrinology, Metabolism, and Diabetes, Aurora, 2015.
35. Colorado NORC – facilitating nutrition and obesity research on campus. Department of Medicine’s Research and Innovations Conference, Aurora, 2015.
36. Studying the Obesity-Breast Cancer Link in the OR-OP/OVX Model. Obesity – Cancer Research Retreat, Colorado Nutrition Obesity Research Center, Aurora, 2015.
37. Topics in Career Development. Career Development Meeting, Division of Endocrinology, Metabolism, and Diabetes, Aurora, 2016.
38. Targeting the barriers to successful weight loss maintenance. Pediatric Nutrition Seminar Series, Aurora, 2016.
39. Hormones and Obesity. Endocrinology and Metabolism Lectures Series, Aurora, 2016.
40. Dietary macronutrients and energy balance in body weight regulation. Obesity and Cardiovascular Disease Lecture Series, Aurora, 2016.
41. The ADOPT Core Measures Project: Early Steps to Personalized Treatments in Obesity Medicine, Endocrine Grand Rounds, Aurora, 2017.
42. Dietary macronutrients and energy balance in body weight regulation. Obesity and Cardiovascular Disease Lecture Series, Aurora, 2017.
43. The ADOPT Core Measures Project: Taking Steps to Personalized Obesity Medicine, Department of Medicine Research Innovations Seminar, Aurora, 2018.
44. Defining Metabolic (In)flexibility Amid Literature Confusions: Moving Toward Practical Applications, Colorado NORC Research Retreat, Aurora, 2018.
45. Obesity and body weight regulation. Obesity and Cardiovascular Disease Lecture Series, Aurora, 2018.
46. Hormones and Obesity. Endocrinology and Metabolism Lectures Series, Aurora, 2019.
47. Colorado NORC Town Hall: The New Molecular and Cellular Analytical Core, Aurora, 2019.
48. Moving forward with the Colorado Nutrition Obesity Research Center (NORC). Department of Medicine Research Innovations Seminar, Aurora, 2019.
49. The Colorado Nutrition Obesity Research Center. Cancer and Metabolism Mini-Symposium, joint sponsorship by the University of Colorado Cancer Center and the Colorado NORC (Virtual), Aurora, 2020.
50. CCTSI PreK Program. CCTSI ETCD Steering Committee Meeting, Aurora (Virtual), 2020.
51. Exercise, Individual Variability, and Weight Loss Maintenance. Cardiology Grand Rounds, Department of Medicine’s Division of Cardiology, Aurora (Virtual), 2021.
52. Merging Models for Menopause and Cancer: A Tumor’s Tale of Two Mammary Glands. Endocrine Research Conference, Aurora (Virtual), 2022.
53. Colorado Nutrition Obesity Research Center. Cores-R-Us Research Seminar Series, Aurora (Virtual), 2022.
54. Colorado Nutrition Obesity Research Center. Department of Medicine Research and Innovation Conference, Aurora, 2022.
55. Colorado Nutrition Obesity Research Center Overview. Colorado Annual NORC Retreat, Aurora, 2022.

56. Producing Productive Partnerships for Studying Obesity and Breast Cancer. Annual Nutrition Section Faculty and Fellow Retreat. From bench to bedside and back again: leveraging clinical-research partnerships, Aurora, 2023.
57. Colorado Nutrition Obesity Research Center. Anschutz Health and Wellness Center Town Hall, Aurora, 2023.
58. Overview of the Colorado Nutrition Obesity Research Center. Colorado NORC Retreat, Aurora, 2023.
59. What can the Colorado NORC and the LEAD Center do for your research? University of Colorado Cancer Center Seminar Series, Aurora, 2023.
60. A role for FSH, independent of estrogen, in regulating energy balance? Diabetes Day 2024, Colorado Diabetes Research Center, Aurora, 2024.
61. Small animal indirect calorimetry: Tracer Applications. Colorado NORC Indirect Calorimetry Workshop, Aurora Colorado, 2024.
62. Overview of the Colorado Nutrition Obesity Research Center (NORC). Colorado NORC Annual Retreat, Aurora, 2024.
63. Dynamic Duos: The power of the mentor-mentee relationship to accelerate career success (Duo: Paul MacLean and Erin Giles). Department of Medicine's REACH Forum, Aurora, 2024.
64. Specific Aims Page Workshop. Department of Medicine's Research Office, Aurora, 2025.
65. Exercise, Individual Variability, and Weight Loss Maintenance. Pathology Grand Rounds, Aurora, 2025.
66. Effects of exercise on appetite regulation: dependence upon biological sex. Colorado U54 SCORE – Project 2 Update for the External Advisory Board, Aurora, 2026.

RESEARCH SUPPORT

**denotes mentored career development, enrichment, or fellowship support for trainees*

Active Research Support with Direct Costs

- NIH/NCI U01 CA296659** MPI- MacLean, Kabos, Sartorius
 New FADS diet for endocrine resistant breast cancer
 \$415,000/yr
 5/01/26 – 4/30/31 (awaiting NOA)
- NIH/NIDDK P30 DK048520** PI- MacLean
 Colorado Nutrition Obesity Research Center
 \$750,000/yr
 09/16/2025 – 06/30/2030
Roles: Director/PI; Associate Director of Energy Balance Laboratory
- NIH/NCI R01 CA258766** MPI- MacLean, Kabos, Catenacci
 Novel Dietary Interventions for Reducing Obesity-Associated Breast Cancer.
 ~\$460,000/yr
 01/01/2022 – 12/31/2026
Role: Lead/contact PI
- NIH/NIA U54 AG062319** PI- Kohrt (MacLean PI Project 2)
 Special Center of Research Excellence (SCORE)
 Bioenergetic and Cardiometabolic Consequences of the Loss of Gonadal Function
 \$1,007,821/yr
 09/20/2012 – 08/31/2028
Roles: Lead of Project 2, Executive Committee
- NIH/NIDDK R01 DK140157** PI- Lanaspá-García
 Targeting AICAR transformylase, a metabolic treatment for both obesity and type 2 diabetes
 \$402,015/yr; 12/01/25–11/30/30
Role: Co-investigator
- VA Merit Award I01BX006986** PI- Lanaspá García
 Targeting AMP Deaminase (AMPD2) to Metabolically Treat Alcohol Use Disorder and Liver Disease
 \$194,000/yr
 10/01/2025 – 09/30/2029 (awarded)
Role: Co-investigator
- *NIH/NCATS UM1 TR001082** MPI- Sokol, Higgins
 Colorado Clinical Translational Science Institute (CCTSI)
 \$7,675,479/yr
 09/15/2023 – 08/31/2030
Role: Director of the Pre-K Program
- *NIH/NCATS K12 TR004412** PI- Burnham
 CTSA K12 Program at University of Colorado Denver
 \$1,081,441/yr
 12/01/2023 – 11/30/2028

Roles: Associate Director of the program

***NIH/NIDDK T32 DK120521** PI- Bessesen
 Research Training Program in Metabolism, Obesity and Type 2 Diabetes
 \$340,416/yr
 8/01/2025 – 07/30/2031
Role: Associate Director of the program

***NIH/NCATS T32 TR004367** PI- Cicutto
 CTSA Predoctoral T32 at University of Colorado Denver
 \$356,292/yr
 09/20/2023 – 08/31/2028
Role: Associate Director of the program

***NIH/NCATS T32 TR004366** PI- Cicutto
 CTSA Postdoctoral T32 at University of Colorado Denver
 \$376,003/yr
 09/18/2023 – 06/30/2028
Role: Associate Director of the program

***NIH/NCATS K12 TR004412** PI- Libby (K12 CDA)
 Colorado Clinical and Translational Science Institute K12 Scholar
 \$141,000/yr
 05/01/2024 – 04/30/2026
Role: Mentor for Andrew Libby

Pending Research Support

NIH/NIDDK R01 DK141819 PI- Theiss
 Adipose tissue extracellular vesicles and intestinal barrier dysfunction
 \$379,877/yr
 12/01/2025 – 11/30/2030
Role: Co-investigator
Status: 9 %-ile, pending council review

NIH/NIDDK K01 DK139429 PI- Roberson
 Regulation of Metabolism by Sestrin3
 \$138,247/yr
 01/01/2026 – 12/31/2030
Role: Primary Mentor
Status: SRG review pending

NIH/NCI R01 CA312380 MPI- Catenacci, Kabos, MacLean
 4:3 Intermittent Fasting to Enhance Weight Loss and Survivorship Health Outcomes in Breast
 Cancer Survivors
 \$500,000/yr
 04/01/2026 – 03/31/2031
Role: Co-PI
Status: SRG review pending

Past Research Support

- NIH/NIDDK R01 DK045092** PI- Barakat
Neutral Lipid Transfer Protein in Diabetes
1995-1999
Role: Graduate Student
- NIH/NIDDK R01 DK046121** PI- Dohm
Muscle glucose metabolism in diabetes and exercise
1999 – 2001
Role: Post-Doctoral Fellow
- American Diabetes Association** PI- Dohm
Mentor-Based Fellowship
1999 – 2001
Role: Post-Doctoral Fellow
- NIH/NIDDK R01 DK038416** PI- Dohm
Muscle glucose metabolism in diabetes and exercise
1999 – 2001
Role: Post-Doctoral Fellow
- NIH/NIDDK P30 DK48520 (P/F Study)** PI- MacLean
Effects of high fat feeding on skeletal muscle sterol response element binding protein expression
\$20,000/yr
01/01/2002 – 12/31/2003
- Pfizer Atorvastatin Research Awards 2002-064** PI- MacLean
Functional aspects of sterol response element binding protein expression in intact skeletal muscle
\$50,000/yr
09/01/2002 – 08/30/2004
- Kraft Foods Preclinical Contract** PI- MacLean
Caloric Availability of Fats
\$40,000/yr
01/01/2004 – 12/31/2004
- NIH/NIDDK R01 DK038088** PI- Hill
Utilization of ingested energy during underfeeding
\$237,500/yr
12/01/2000 – 11/30/2006
Role: Co-investigator
- American Cancer Society IRG 57-001-44** PI- MacLean
Effects of obesity on breast cancer in a postmenopausal model
\$20,000/yr
01/01/2005 – 12/31/2006
- NIH/NIDDK K01 DK067403** PI- MacLean
Functional aspects of SREBP1c in intact skeletal muscle

\$130,194/yr

12/01/2004 – 11/30/2007

Kraft Foods Preclinical Contract

PI- MacLean

Caloric Availability of Fats

\$70,000/yr

01/01/2007 – 12/31/2008

General Mills Research Grant

PI- MacLean

Grants for Innovative Nutrition Research - Sustained Weight Reduction with Resistant Starch

\$62,500/yr

04/01/2007 – 03/31/2008

NIH/NIA R21 AG027809

PI- Jankowski

Acetaminophen and impaired musculoskeletal adaptations to exercise training

\$175,000/yr

07/01/2006 – 06/30/2009

Role: Co-investigator

Thorkildsen Research Fellowship

PI- Giles (MacLean)

Obesity and postmenopausal breast cancer

\$35,000/yr

03/01/2009 – 02/28/2010

Role: Mentor

CCTSI Trainee Scholars Award

PI- Wahlig (MacLean)

Effect of obesity on the metabolic challenge of lactation

\$30,000/yr

05/01/2009 – 04/30/2010

Role: Co-mentor

Dole Research Institute

PI- Higgins

Does Banana Starch Consumption Increase Fat Oxidation In Rats?

\$40,000/yr

01/01/2010 – 12/31/2010

Role: Co-investigator

NIH/NIA R01 AG018857

PI- Kohrt

COX inhibition and musculoskeletal responses to exercise.

\$412,743/yr

12/01/2006-11/30/2011

Role: Co-investigator

Komen Foundation KG081323

MPI- Anderson, Thor

Modulation of obesity-induced breast cancer by Metformin

\$200,000/yr

12/01/2008-11/30/2011

Role: Co-investigator

AICR Post-Doctoral Fellowship

PI- Giles (MacLean)

American Institute for Cancer Research

- Metabolic Inflexibility: A potential link between obesity and post-menopausal breast cancer.
\$40,000/yr
01/01/2010 – 12/31/2012
Role: Mentor
- CCTSI Co-Pilot Award** PI- Higgins
Optimal strategies for weight gain in anorexia nervosa: a translational approach
\$50,000
03/01/2010 – 02/28/2011
Role: Co-investigator
- Academic Enrichment Fund / NORC** PI- MacLean
Quantitative magnetic resonance system for body composition assessment in small animals
\$125,000
12/01/2008 – 11/30/2011
- NIH/NIDDK R01 DK071692** PI- Wyatt
Using the energy gap to prevent weight regain
\$397,566/yr
07/01/2006 – 06/30/2012
Role: Co-investigator
- NIH/NCRR S10 RR27675** MPI- Jensen, MacLean
Mouse Indirect Calorimetry and Tracer System
\$141,424
04/01/2011 – 03/31/2012
Role: Lead/Contact PI
- NIH/NIDDK R01 DK038088** PI- MacLean
Utilization of ingested energy during underfeeding
\$205,000/yr
04/01/2007 – 03/31/2013
- DOM Team Science Pilot Proposal** MPI- MacLean, Kabos, Sartorius
Department of Medicine
Development of a PDX Xenograft Model for Studies of Obesity and Cancer
\$40,000/yr
01/01/2015 – 12/31/2015
- *NIH/NCI K99/R00 CA169430** PI- Giles (MacLean)
Obesity associated inflammation and postmenopausal breast cancer
\$130,000(y1-y2)/\$250,000 (y3-y5)
07/01/2013 – 06/30/2018
Role: Mentor
- NIH/NICHD P01 HD038129** PI- Anderson
Functional Development of the Mammary Gland
\$780,680/yr; Project 2 - \$145,000/yr
07/01/2011 – 06/30/2016
Role: PI Project 2

- *NIH/NCATS TL1 TR001081** (Sokol) PI- Foright (MacLean)
 CCTSI Predoctoral TL1 Fellowship
 Sex differences of exercise on appetite regulation
 07/01/2015 – 06/30/2016
Role: Mentor
- *NIH K12 HD057022** (Regensteiner) PI- Rudolph (MacLean)
 BIRCIWH Scholar Career Development Award
 Early Life Fatty Acid Exposures Dictate Obesity Predisposition
 \$90,000/yr
 08/01/2015 – 07/31/2017
Role: Mentor
- *NIH/NCATS TL1 TR001081** (Sokol) PI- Presby (MacLean)
 CCTSI Predoctoral TL1 Fellowship
 Impact of exercise on energy expenditure during weight regain
 07/01/2016 – 06/30/2017
Role: Mentor
- NIH/NICHD P50 HD073063** PI- Kohrt (MacLean Project 2)
 Special Center of Research (SCOR)
 Bioenergetic and Metabolic Consequences of the Loss of Gonadal Function
 \$750,000/yr; Project 2 - \$150,000/yr
 09/01/2012 – 08/31/2018
Role: PI of Project 2
- NIH/NICHD R01 HD075285** MPI- Mcmanaman, MacLean
 Postnatal Actions of Maternal Obesity on Neonatal Metabolic Health
 \$250,000/yr
 12/01/2013 – 11/30/2018
Role: Co-PI
- NIH/NCI R01 CA164166** MPI- MacLean, Schedin
 A narrowed window for targeting metabolic flexibility in breast cancer prevention
 \$207,500/yr
 02/01/2013 – 01/31/2019
- *NIH/NCI F32 CA213797** PI- Matthews (Sartorius, MacLean)
 Metabolic determinants of breast cancer
 \$59,394/yr
 02/01/2017 – 01/31/2019
Role: Co-mentor
- *NIH/NIDDK F31 DK115238** PI- Foright (MacLean)
 NRSA Predoctoral Fellowship
 Exercise-induced leptin sensitivity in the brain: sex differences in homeostatic neurocircuits.
 \$40,000/yr
 07/01/2017 – 06/30/2019
Role: Mentor

- *Komen Foundation CCR17483321** PI- Wellberg (Sartorius, MacLean)
 Career Catalyst Research Grant
 Growth Factor Signaling in Obesity Associated Breast Cancer
 \$150,000/yr
 08/01/2017 – 07/31/2020
 Role: Co-mentor
- NIH/NIDDK R01 DK108408** PI- Johnson
 Dietary Salt has an Unrecognized Role in Modulating Energy Intake and Metabolic Syndrome
 \$286,867/yr
 04/01/2016 – 03/31/2021
 Role: Co-investigator
- *NIH/NIDDK K01 DK109079** PI- Rudolph (MacLean)
 Early Life Fatty Acid Exposures Dictate Obesity Predisposition
 \$140,000/yr
 07/01/2017 – 07/31/2021
 Role: Mentor
- *NIH/NCATS UL1 TR001082 (Sokol)** PI- Wellberg (Sartorius, MacLean)
 CCTSI KL2 Career Development Award
 Growth factor signaling in obesity associated breast cancer
 \$150,000/yr
 11/01/2017 – 10/31/2019
 Role: Co-Mentor
- *VA CDA2 BX003185** PI- Keller (Reusch, MacLean)
 Veteran's Administration Career Development Award
 Repair of Vascular Contractility and Mitochondrial Function by NOS Recoupling
 \$156,400/yr
 07/01/2017 – 06/30/2022
 Role: Co-mentor
- *NIH/NCATS UL1 TR001082 (Sokol)** PI- Sherk (MacLean)
 CCTSI KL2 Career Development Award
 Impact of obesity on bone material properties
 \$150,000/yr
 10/01/2018 – 09/30/2020
 Role: Mentor
- NIH/NIDDK R01 DK111622** PI- Catenacci
 Comparison of Weight Loss Induced by Intermittent Fasting Versus Daily Caloric Restriction in
 Individuals with Obesity: A 1-Year Randomized Trial
 \$500,000/yr
 07/01/2017 – 06/30/2022
 Role: Co-investigator
- NIH/NCI F31 CA261053** PI -Ward (Sartorius, MacLean)
 NRSA Predoctoral Fellowship Award
 Altered Lipid Metabolism in Luminal Breast Cancer Stem Cells and Endocrine Resistance

\$38,420/yr

04/15/2021 – 04/14/2023

Role: Co-mentor

***NIH/NCATS UL1 TR001082**

PI- Sokol

Colorado Clinical Translational Science Institute (CCTSI)

\$7,660,474/yr

10/01/2018 – 09/30/2023

Roles: Director Pre-K Program; Associate Director of the K12 and T32 Programs

***NIH/NIDDK P30 DK48520-26S2**

PI- Wilkerson (MacLean)

Colorado Nutrition Obesity Research Center- Supplement Award

\$115,068/yr

02/01/2021 – 01/31/2023

Role: Mentor for Dr. Rochelle Cason-Wilkerson

***VA CDA2 BX004533**

PI- Scalzo (Reusch, MacLean)

Veteran's Administration Career Development Award

The Interaction of Diabetes and Estrogen on Skeletal Muscle Bioenergetics

\$156,400/yr

01/01/2019 – 12/31/2023

Role: Co-mentor

NIH/NCI R01 CA241156

PI- Wellberg

Growth Factor Signaling in Obesity Associated Breast Cancer.

\$250,000/yr

07/01/2019 – 06/30/2024

Role: Co-investigator

***NIH/NIDDK P30 DK48520-26S1**

PI- MacLean

Colorado Nutrition Obesity Research Center- Supplemental Pilot Program

\$150,000/yr

08/01/2021 – 07/31/2025

COMPLETE LIST OF PUBLICATIONS

Publication Summary: Total – 135
 1st Author – 26
 2nd Author – 16
 Senior Author – 34
 Original Research – 113
 Reviews, Editorials, and Commentaries – 21
 Book Chapters – 2
 Conference Abstracts – 145+

Original Research (113)

* Cover Article.

† Highlighted by an Editorial, Publisher's metric, or the lay press.

‡ Review Article, containing original research.

§ Underrepresented minority or disadvantaged background trainee as first author

1. Jones JP, **MacLean PS**, Winder WW. Correlation between fructose 2,6-bisphosphate and lactate production in skeletal muscle. *J Appl Physiol* 76:2169-2176, 1994. [m1](#)
2. Winder WW, **MacLean PS**, Chandler SL, Huang W, Mills RH. Role of epinephrine during insulin-induced hypoglycemia in fasted rats. *J Appl Physiol* 77:270-276, 1994. [m2](#)
3. **MacLean PS**, Winder WW. Caffeine decreases malonyl-CoA in isolated perfused skeletal muscle of rats. *J Appl Physiol* 78:1496-1501, 1995. [m3](#)
4. Winder WW, **MacLean PS**, Lucas JC, Fernley JE, Trumble GE. Effect of fasting and refeeding on acetyl-CoA carboxylase in rat hindlimb muscle. *J Appl Physiol* 78:578-582, 1995. [m4](#)
5. Vadlamudi S, **MacLean P**, Green T, Shukla N, Bradfield J, Vore S, Barakat HA. Role of sex steroids in regulating cholesteryl ester transfer protein. *Metabolism* 47:1048-1051, 1998. DOI: 10.1016/S0026-0495(98)90276-1 [m5](#)
6. Vadlamudi S, **MacLean P**, Israel RG, Marks RH, Hickey M, Otvos J, Barakat HA. Effects of oral combined hormone replacement therapy on plasma lipids and lipoproteins. *Metabolism* 47:1222-1226, 1998. DOI: 10.1016/S0026-0495(98)90327-4 [m6](#)
7. Vadlamudi S, **MacLean PS**, Green T, Jones JP, Vore S, Barakat HA. Effect of acute hyperinsulinemia on cholesteryl ester transfer protein expression in rabbits. *Med Sci Res* 27:21-23, 1999. [m7](#)
8. **MacLean PS**, Bower JF, Vadlamudi S, Green T, Barakat HA. Lipoprotein subpopulation distributions in lean, obese, and type 2 diabetic women: a comparison of African and Caucasian Americans. *Obes Res* 8:62-70, 2000. DOI: 10.1038/oby.2000.9 [m8](#)
9. **MacLean PS**, Vadlamudi S, MacDonald KG, Pories WJ, Houmard J, Barakat HA. Impact of insulin resistance on lipoprotein subpopulation distribution in lean and obese women. *Metabolism* 49:285-292, 2000. DOI: 10.1016/S0026-0495(00)80002-5 [m9](#)
10. Houmard JA, Cox JH, **MacLean PS**, Barakat HA. Effect of short-term exercise training on leptin and insulin action. *Metabolism* 49:858-861, 2000. DOI: 10.1053/meta.2000.6751 [m10](#)
11. **MacLean PS**, Barakat HA. Insulin does not regulate the promoter of cholesteryl ester transfer protein (CETP) in HIRc/pCETP-CAT cells. *Mol Cell Biochem* 211:1-7, 2000. DOI: 10.1023/A:1007027818389 [m11](#)

12. **MacLean PS**, Vadlamudi S, Hao E, Barakat HA. Differential expression of cholesteryl ester transfer protein (CETP) in the liver and plasma of fasted and fed transgenic mice. *J Nutri Biochem* 11:318-325, 2000. DOI: 10.1016/S0955-2863(00)00084-X [m12](#)
13. **MacLean PS**, Tanner CJ, Houmard JA, Barakat HA. Plasma cholesteryl ester transfer activity is not linked to insulin sensitivity. *Metabolism* 50:783-788, 2001. DOI: 10.1053/meta.2001.24205 [m13](#)
14. Zheng D, **MacLean PS**, Pohnert SC, Knight JB, Olson AL, Winder WW, Dohm GL. Regulation of muscle GLUT4 transcription by AMP-activated protein kinase. *J Appl Physiol* 91: 1073-1083, 2001. [m14](#)
15. **MacLean PS**, Zheng D, Jones JP, Olson AL, Dohm GL. Exercise-induced transcription of the muscle glucose transporter (GLUT-4) gene. *Biochem Biophys Res Comm* 292: 409-414, 2002. DOI: 10.1006/bbrc.2002.6654 [m15](#)
16. Muoio DM, **MacLean PS**, Lang D, Li S, Houmard J, Way J, Krauss WE, Winegar DA, Corton C, Dohm GL. Fatty acid homeostasis and induction of lipid regulatory genes in skeletal muscles of PPAR α -knockout mice: Evidence for compensatory regulation by PPAR δ . *J Biol Chem* 277 (29): 26089-97, 2002. DOI: 10.1074/jbc.M203997200 [m16](#)
17. Bizeau ME, **MacLean PS**, Johnson GC, Wei Y. Skeletal muscle SREBP-1c decreases with fasting and increases with feeding in rats. *J Nutri* 133: 1787-1792, 2003. [m17](#)
18. **MacLean PS**, Bower JF, Vadlamudi S, Osborne JN, Bradfield JF, Burden HW, Bensch WH, Kauffman RF, Barakat HA. Cholesteryl ester transfer protein (CETP) expression prevents diet-induced atherosclerotic lesions in male db/db mice. *Arterioscler Thromb Vasc Biol* 23:1412-1415, 2003. DOI: 10.1161/01.ATV.0000080687.94313.67 [m18](#)
19. † **MacLean PS**, Higgins JA, Johnson GC, Fleming-Elder BK, Peters JC, Hill JO. Metabolic adjustments with the development, treatment, and recurrence of obesity in obesity-prone rats. *Am J Physiol Regul Integr Comp Physiol* 287(2):R288-97, 2004. DOI: 10.1152/ajpregu.00010.2004 [m19](#)
20. † **MacLean PS**, Higgins JA, Johnson GC, Fleming-Elder BK, Donahoo WT, Melanson EL, Hill JO. Enhanced metabolic efficiency contributes to weight regain after weight loss in obesity-prone rats. *Am J Physiol Regul Integr Comp Physiol* 287:R1306-15, 2004. DOI: 10.1152/ajpregu.00463.2004 [m20](#) [Editorial Foci - Barry Levin](#)
21. **MacLean PS**, Vadlamudi S, MacDonald KG, Pories WJ, Barakat HA. Suppression of hepatic CETP expression in obese humans with the development of type 2 diabetes mellitus. *J Clin Endo Metab* 90, 2250-8, 2005. DOI: 10.1210/jc.2004-1325 [m21](#)
22. Qiao L, **MacLean PS**, Schaack J, Orlicky DJ, Darimont C, Pagliassotti MJ, Friedman JE, Shao J. C/EBP α regulates human adiponectin gene transcription through an intronic enhancer. *Diabetes* 54(6): 1744-1754, 2005. DOI: 10.2337/diabetes.54.6.1744 [m22](#)
23. Qiao L, **MacLean PS**, You H, Schaack J, Shao J. Knocking down liver C/EBP α by adenovirus-transduced siRNA improves hepatic gluconeogenesis and lipid homeostasis in db/db mice. *Endocrinology* 147(6):3060-3069, 2006. DOI: 10.1210/en.2005-1507 [m23](#)
24. **MacLean PS**, Higgins JA, Jackman M, Johnson GC, Fleming-Elder BK, Wyatt H, Melanson EL, Hill JO. Peripheral metabolic responses to prolonged weight reduction that promote rapid, efficient regain in obesity-prone rats. *Am J Physiol Regul Integr Comp Physiol* 290:1577-1588, 2006. DOI: 10.1152/ajpregu.00810.2005 [m24](#)

25. Jackman MR, Kramer R, **MacLean PS**, Bessesen DH. Trafficking of dietary fat in obesity prone and obesity resistant rats. *Am J Physiol Endocrinol Metab* 291: E1083-E1091, 2006. DOI: 10.1152/ajpendo.00159.2006 [m25](#)
26. Jensen DR, Knaub LA, Konhilas JP, **MacLean PS**, Eckel RH. Increased Thermoregulation in Cold Exposed Transgenic Mice Overexpressing Lipoprotein Lipase in Skeletal Muscle: An Avian Phenotype? *J Lipid Res* 49(4):870-9, 2008. DOI: 10.1194/jlr.M700519-JLR200 [m26](#)
27. † Jackman MR, Steig A, Higgins JA, Johnson GC, Fleming-Elder BK, Bessesen DH, **MacLean PS**. 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, 2008. DOI: 10.1152/ajpregu.00808.2007 [m27](#)
28. † **MacLean PS**, Higgins JA, Wyatt H, Melanson E, Johnson GC, Jackman MR, Giles ED, Brown I, Hill JO. Regular exercise attenuates the metabolic drive to regain weight after long term weight loss. *Am J Physiol Regul Integr Comp* 297(3):R793-802, 2009. DOI: 10.1152/ajpregu.00192.2009 [m28](#)
29. Melanson EL, Gozansky WS, Barry DW, **Maclean PS**, Grunwald GK, Hill JO. When energy balance is maintained, exercise does not induce negative fat balance in lean sedentary, obese sedentary, or lean endurance-trained individuals. *J Appl Physiol* 107(6):1847-56, 2009. DOI: 10.1152/jappphysiol.00958.2009 [m29](#)
30. † **MacLean PS**, Giles ED, Johnson GC, McDaniel SM, Fleming-Elder BK, Gilman KA, Andrianakos AG, Jackman AR, Shroyer KR, Schedin PJ. A surprising link between the energetics of weight gain and mammary tumor progression in a model of postmenopausal obesity. *Obesity* 18(4):696-703, 2010. doi: 10.1038/oby.2009.307 [m30](#)
31. Civitarese AE, **MacLean PS**, Carling S, Moro C, Pierce A, Wang Z, Bayless L, Cefalu W, Becker TC, Newgard CB, Walder K, Collier GR, Smith SR, and Ravussin E. Regulation of Skeletal Muscle Oxidative Capacity and Insulin Signaling by the Mitochondrial Protease PARL. *Cell Metab* 11(5):412-26, 2010. DOI: 10.1016/j.cmet.2010.04.004 [m31](#)
32. Jackman JR, **MacLean PS**, Bessesen DH. Energy expenditure in obesity prone and obesity resistant rats before and after the introduction of a high fat diet. *Am J Physiol Regul Integr Comp Physiol* 299(4):R1097-105, 2010. doi: 10.1152/ajpregu.00549.2009 [m32](#)
33. Giles ED, Jackman MR, Johnson GC, Schedin PJ, Houser JL, **MacLean PS**. Effect of the estrous cycle and surgical ovariectomy on energy balance, fuel utilization, and physical activity in lean and obese female rats. *Am J Physiol Regul Integr Comp Physiol* 299: R1634-1642, 2010. doi: 10.1152/ajpregu.00219.2010 [m33](#)
34. † **MacLean PS**, Bergouignan A, Cornier M, Jackman MR. Biology's response to dieting: the impetus for weight regain. *Am J Physiol Regul Integr Comp Physiol* 301(3):R581-600, 2011. doi: 10.1152/ajpregu.00755.2010 [m34rev8](#)
35. † Higgins JA, Brown IL, Johnson GC, Jackman MR, Steig A, Wyatt HR, Melanson EL, Hill JO, **MacLean PS**. Resistant starch and exercise independently attenuate weight regain on a high fat diet in a rat model of obesity. *Nutri Metabolism* 8:49(pg 1-15), 2011. doi:10.1186/1743-7075-8-49 [m35](#)
36. † Steig AJ, Jackman MR, Giles ED, Higgins JA, Johnson GC, Mahan C, Melanson EL, Wyatt HR, Eckel RH, Hill JO, **MacLean PS**. Exercise reduces appetite and traffics excess nutrients away from energetically efficient pathways of lipid deposition during the early stages of weight

- regain. *Am J Physiol Regul Integr Comp Physiol* 301(3): R656-667, 2011. DOI: 10.1152/ajpregu.00212.2011 [m36](#)
37. Wahlig JL, Bales ES, Jackman MR, Johnson GC, McManaman JL, **MacLean PS**. Impact of high fat diet and obesity on energy balance and fuel utilization during the metabolic challenge of lactation. *Obesity* 20(1):65-75, 2012. doi: 10.1038/oby.2011.196 [m37](#)
 38. Bergouignan A, Gozansky WS, Barry DW, Leitner W, **MacLean PS**, Hill JO, Draznin B, Melanson EL. Increasing dietary fat elicits similar changes in fat oxidation and markers of muscle oxidative capacity in lean and obese humans. *PLoS ONE* 7(1): e30164, 2012. doi:10.1371/journal.pone.0030164 [m38](#)
 39. Ishimoto T, Lanaspas MA, Le MT, Garcia GE, Diggle CE, **MacLean PS**, Jackman MR, Asipu A, Roncal C, Kosugi T, Rivard CJ, Maruyama S, Rodriguez-Iturbe B, Sánchez-Lozada LG, Bonthron DT, Sautin YY, Johnson RJ. Opposing effects of fructokinase C and A isoforms on fructose-induced metabolic syndrome in mice. *Proc Natl Acad Sci USA* 13;109(11):4320-5, 2012. doi: 10.1073/pnas.1119908109 [m39](#)
 40. McCurdy CE, Schenk S, Holliday MJ, Philp A, Houck JA, Patsouris D, **Maclean PS**, Majka SM, Klemm DJ, Friedman JE. Attenuated pik3r1 expression prevents insulin resistance and adipose tissue macrophage accumulation in diet-induced obese mice. *Diabetes* 61(10):2495-505, 2012. doi: 10.2337/db11-1433 [m40](#)
 41. *† Giles ED, Wellberg EA, Astling DP, Anderson SM, Thor AD, Jindal S, Tan AC, Schedin PS, **MacLean PS**. Obesity and overfeeding affecting both tumor and systemic metabolism activates the progesterone receptor to contribute to postmenopausal breast cancer. *Cancer Research* 15;72(24):6490-501, 2012. doi: 10.1158/0008-5472.CAN-12-1653 [m41](#)
 42. Jankowski CM, Gozansky WS, **Maclean PS**, Shulman B, Wolfe P, Schwartz RS, Kohrt WM. N-Acetyl-4-aminophenol and musculoskeletal adaptations to resistance exercise training. *Eur J Appl Physiol* 113(5):1127-36, 2013. doi: 10.1007/s00421-012-2529-z [m42](#)
 43. Higgins J, Hagman J, Pan Z, **MacLean P**. Increased physical activity not decreased energy intake is associated with inpatient medical treatment for anorexia nervosa in adolescent females. *PLOS ONE* 8(4):e61559, 2013. doi: 10.1371/journal.pone.0061559 [m43](#)
 44. Ishimoto T, Lanaspas MA, Rivard CJ, Roncal-Jimenez CA, Orlicky DJ, Cicerchi C, McMahan RH, Abdelmalek MF, Rosen HR, Jackman MR, **MacLean PS**, Diggle CP, Asipu A, Inaba S, Kosugi T, Sato W, Maruyama S, Sánchez-Lozada LG, Sautin YY, Hill JO, Bonthron DT, Johnson RJ. High fat and high sucrose (western) diet induce steatohepatitis that is dependent on fructokinase. *Hepatology* 58(5):1632-43, 2013. doi: 10.1002/hep.26594 [m44](#)
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- gland. *Am J Physiol Endo Metab* 305(9):E1103-14, 2013. doi: 10.1152/ajpendo.00337.2013. [m48](#)
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 56. Giles ED, Hagman J. Pan Z, **MacLean, PS**, and Higgins JA. Weight restoration on a high carbohydrate refeeding diet promotes rapid weight regain and hepatic lipid accumulation in female anorexic rats. *Nutr Metab (Lond)* 13:18, eCollection 2016. [m56](#)
 57. Catenacci VA, Pan Z, Ostendorf D, Brannon S, Gozansky WS, Mattson MP, Martin B, **MacLean PS**, Melanson EL, Troy Donahoo W. A randomized pilot study comparing zero-calorie alternate-day fasting to daily caloric restriction in adults with obesity. *Obesity* 24(9):1874-83, 2016. [m57](#)
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 60. #† Giles ED, Jackman MR, **MacLean PS**. Modeling Diet-Induced Obesity with Obesity-Prone Rats: Implications for Studies in Females. *Front Nutr* 24;3:50, 2016. [m60rev14](#)
 61. Song Z, Roncal-Jimenez CA, Lanasp-Garcia MA, Oppelt SA, Kuwabara M Md PhD, Jensen T, Milagres T, Andres-Hernando A, Ishimoto T, Garcia GE, Johnson GC, **MacLean PS**, Sanchez-Lozada LG, Tolan DR, Johnson RJ. Role of Fructose and Fructokinase in Acute Dehydration Induced Vasopressin Gene Expression and Secretion in Mice. *J Neurophysiol* 117(2):646-654, 2017. [m61](#)

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Reviews, Editorials, and Commentaries (21)

† *Highlighted by an Editorial, Publisher's metric, or the lay press.*

‡ *Review Article, containing original research.*

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Books/Chapters (2)

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Presented Abstracts (145)

σ Oral presentation

β Minority or disadvantaged background trainee as first author

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 117. $\sigma B \gamma \delta$ Presby DM, Foright RM, Rudolph MC, Sherk VD, Houck JA, Jackman MR, Johnson GC, Higgins JA, **MacLean PS**. Can intermittent cold exposure during caloric restriction increase energy expenditure? Fribourg Obesity Research Conference (FORC). Fribourg (Switzerland), 2017.
 118. $\sigma \delta$ **MacLean PS**. Defining Metabolic (In)flexibility Amid Literature Confusions: Moving Toward Practical Applications. Recent Advances and Controversies in Measuring Energy Metabolism (RACMEM), Fribourg (Switzerland), 2017.
 119. $\sigma B \gamma \delta$ Presby DM, Sherk VD, Foright RM, Jackman MR, Houck JA, Rudolph MC, Johnson GC, Higgins JA, **MacLean PS**. The Effect of Skeletal Muscle Lipoprotein Lipase Overexpression on Obesity, Weight Loss Maintenance, and Weight Regain. Recent Advances and Controversies in Measuring Energy Metabolism (RACMEM), Fribourg (Switzerland), 2017.
 120. Giles ED, Crump LS, **MacLean PS**, Schedin P, Wellberg EA, Lyons TR. Metformin Decreases Obesity-Associated Peri-Tumor Lymphangiogenesis in a Model of Breast Cancer. Obesity Week, Washington D.C., 2017.
 121. σB Foright RM, Hild A, Legget K, Tregellas J, **MacLean PS**, Cornier MA. Effects of exercise during weight loss maintenance on appetite regulation in women. Obesity Week, Washington D.C., 2017.
 122. Rudolph MC, Young BE, Houck JA, Jackman MR, Webb PG, Lemas DJ, Hernandez TL, Barbour LA, Yang IV, Friedman JE, Krebs NF, **MacLean PS**. High n-6 polyunsaturated fatty acids in human milk elevates adipose deposition in infants, and in mice, hypomethylates PPAR γ 2 increasing later life obesity risk. Building Better Babies Conference, Anschutz Campus, May 2017.
 123. γ Wellberg EA, Johnson S, Jacobsen B, Gillen AE, Anderson SM, Kabos, P, Sartorius, CA, **MacLean PS**. FGFR1 signaling links obesity to ER positive breast cancer progression in a murine xenograft model. ObesityWeek, Washington D.C., 2017.
 124. Rudolph MC, Young BE, Houck JA, Girodo J, Jackman MR, Webb PG, Lemas DJ, Hernandez TL, Barbour LA, Yang IV, Friedman JE, Krebs NF, **MacLean PS**. High n-6 polyunsaturated fatty acids in human milk elevates adipose deposition in infants, and in mice, hypomethylates PPAR γ 2 increasing later life obesity risk. Building Interdisciplinary Careers in Women's Health, National Institutes of Health, Bethesda, 2017.
 125. Rudolph MC, Jones KL, Sanford BL, Houck JA, Webb PG, Rodeheffer MS, Friedman JE, **MacLean PS**. n-3 PUFA Exposure During Lactation Tempers Offspring Adipocyte Precursor Differentiation. Colorado Clinical and Translational. Science Initiative Regional Conference, Longmont CO, 2018.
 126. B Foright RM, Johnson GC, Kahn D, Charleston CA, Presby DM, Sherk VD, Jackman MR, Greenwood BN, **MacLean PS**. Sex differences in appetite and activity with exercise: a possible role for hypothalamic inflammation. Poster presentation. National Conference on Women's Health and Sex Differences Research. Denver, 2018.

127. **By** Bermudez B, Carpenter RD, Foright RM, Presby DM, Johnson GC, Higgins JA, Jackman MR, Houck JA, **MacLean PS**, Sherk VD. Osteogenic responses to exercise with obesity. RaCAS symposium, 10th Annual Women's Research Day. Denver, CO, 2018.
128. **B** Foright RM, Johnson GC, Kahn D, Charleston CA, Presby DM, Sherk VD, Jackman MR, Greenwood BN, **MacLean PS**. Sex differences in appetite and activity with exercise: a possible role for hypothalamic inflammation. NORC Retreat. Denver, CO, 2018.
129. **B** Presby DM, Jackman MR, Sherk VD, Rudolph MC, Foright RM, Houck JA, Johnson GC, Higgins JA, Eckel RH, **MacLean PS**. Enhanced skeletal muscle lipid metabolism attenuates weight regain by potentiating thermogenesis. NORC Retreat. Denver, 2018.
130. σ Wellberg EA, Johnson S, Jacobsen B, Gillen AE, Anderson SM, Kabos, P, Sartorius, CA, **MacLean PS**. FGFR1 Signaling Promotes Obesity-Associated Breast Cancer Progression Through ER Activation. Annual Meeting of the Obesity Society. Nashville TN, 2018
131. σ Rudolph MC, Jones KL, Sanford BL, Houck JA, Webb PG, Rodeheffer MS, Friedman JE, **MacLean PS**. Postnatal n-3 PUFA Temper the Commitment and Differentiation of Adipocyte Precursors. Annual Meeting of the Obesity Society. Nashville TN, 2018.
132. σ **By** Foright R, Johnson GC, Kahn DE, Charleston CA, Presby D, Sherk VD, Jackman MJ, Greenwood BN, **MacLean PS**. Sex Differences in Appetite Regulation With Exercise Training: A Role for Hypothalamic IL-6. Annual Meeting of the Obesity Society. Nashville TN, 2018.
133. σ Ostendorf DM, **MacLean PS**, Caldwell AE, Sayer RD, Wayland LT, Scorsone JJ, Bing K, Masters KS, Bessesen DH, Melanson EL, and Catenacci VA. Feasibility and Logistics of Incorporating ADOPT Core Measures in a Randomized Weight Loss Trial. Annual Meeting of the Obesity Society. Nashville TN, 2018.
134. σ **By** Presby D, Foright RM, Rudolph MC, Sherk VD, Houck JA, Jackman MR, Johnson GC, Higgins JA, **MacLean PS**. Enhanced Skeletal Muscle Lipid Metabolism Attenuates Weight Regain By Potentiating Energy Expenditure. Annual Meeting of the Obesity Society. Nashville TN, 2018.
135. σ **B** Sherk VD, Heveran CM, Foright RM, Johnson GC, Ferguson VL, **MacLean PS**. Obesity and short-term aerobic exercise effects on bone microscale material properties are sex-specific. 8th World Congress on Biomechanics. Dublin, Ireland, 2018.
136. σ Heveran CM, Sherk VD, Foright RM, Johnson GC, **MacLean PS**, Ferguson VL. Microscale lamellar cortical bone mineralization and heterogeneity predict fracture toughness. 8th World Congress on Biomechanics. Dublin, Ireland, 2018.
137. **By** Bermudez B, Carpenter RD, Foright RM, Presby DM, Johnson GC, Higgins JA, Jackman MR, Houck JA, **MacLean PS**, Sherk VD. Obesity history influences bone health independently from diet composition, but bone can be improved with moderate intensity aerobic exercise training. American Society for Bone Mineral Research. Orlando, FL, 2019.
138. **By** Bermudez B, Presby DM, Carpenter RD, Foright RM, Johnson GC, Higgins JA, Jackman MR, Houck JA, **MacLean PS**, Sherk VD. Dietary Fat Retention in Cortical Bone in Rats Fed High Fat Diet. American Society for Bone Mineral Research. Orlando, FL, 2019.
139. Rudolph MC, Trahan GD, Presby DM, Stanford BL, Houck JA, Webb PG, Rodeheffer MS, Jones KL, **MacLean PS**. Exposure to n-3 PUFA during Lactation Mediates Adipocyte Stem-Like Subtype Diversity in Offspring. Gordon Research Conference. Newry, ME, 2019.
140. **By** Presby DM, Rudolph MC, Jackman MR, Houck JA, Eckel RH, **MacLean PS**. Enhancing Skeletal Muscle Lipid Uptake Attenuates Weight Regain by Potentiating Energy Expenditure. Kern Lipid Conference. Vail, CO, 2019.

141. **By** Presby DM, Rudolph MC, Jackman MR, Houck JA, Eckel RH, **MacLean PS**. Enhancing Skeletal Muscle Lipid Uptake Attenuates Weight Regain by Potentiating Energy Expenditure. Colorado NORC Retreat. Denver, CO, 2019.
142. **σBy** Presby DM, Rudolph MC, Jackman MR, Houck JA, Johnson GC, Eckel RH, **MacLean PS**. Acute exercise and chronic training adaptations potentiate energy expenditure during weight regain. Annual Meeting of the Obesity Society. Las Vegas, NV, 2019.
143. Sherk VD, Heveran CM, Foright RM, Johnson GC, Ferguson VL, **MacLean PS**. Influence Of Diet And Exercise On Fracture Toughness And Bone Geometry And Microscale Properties In Female And Male Rats. Orthopedic Research Society. Austin, TX, 2019.
144. Heveran CM, Sherk VD, Foright RM, Johnson GC, **MacLean PS**, Ferguson VL. Microscale Mechanical Heterogeneity Of Cortical Lamellar Bone Explains Fracture Toughness Across Sex, Body Composition, And Activity In Wistar Rats. Orthopedic Research Society. Austin, TX, 2019
145. Sherk VD, Bermudez B, **MacLean PS**, Wellberg EA. Two Weeks of Tamoxifen Induces Cortical Bone Loss in Estrogen-Replete Mice Fed HFD. Annual Meeting of the Obesity Society. Las Vegas, NV, 2019.
146. Yeo EN, Scadden AW, Cole JB, Litkowski EM, James KL, Pan Z, Lozupone C, Ostendorf DM, **MacLean PS**, Melanson EL, Bessesen DH, Catenacci VA, Borengasser SJ, Stanislowski MA. Obesity Genetic Risk Scores and Weight Loss in Participants from the Daily Caloric Restriction versus Intermittent Fasting Trial (DRIFT). Nutrition 2024, Annual Meetings of the American Society for Nutrition, 2024.

End of accounting

MENTORING AND TEACHING ACTIVITIES

Formal Coursework

Brigham Young University, Department of Physiology and Biophysics

Advanced Physiology Laboratory (PDBio 362)

Teaching Assistant (1992 - 1993)

Endocrinology (PDBio 565)

Teaching Assistant (1993 - 1994)

East Carolina University, Brody School of Medicine

Exercise Physiology (EXSS 4805)

Course Director (2000)

Medical Biochemistry (BIOC 7300)

Invited Lecturer (1998 - 1999)

Metabolism (BIOC 8320)

Invited Lecturer (1999 - 2000)

University of Colorado Anschutz Medical Campus

Theory and application of techniques for the study of human metabolism in vivo (CLSC 7400)

Instructor (2002 - 2003)

Course Director (2004 - 2012)

Integrated Sciences Basic to Medicine (CHAS 5112/5113)

Invited Lecturer (2002 - 2008)

Endocrinology and Metabolism (RPSC 7801)

Invited Lecturer (2006 - present)

Advanced Topics in Cell Signaling (PHSL 7840)

One-on-one Instructor (2006)

Amy Steig

Rachel Lindstrom

Advanced Topics in Cancer Biology (CANB 7600)

Invited Lecturer (2012 – 2014)

Obesity and Cardiovascular Disease (IDPT 6006)

Invited Lecturer (2016 – 2020)

Training and Graduate Program Activities

Graduate Faculty Member, UC Denver, Aurora, CO.

Clinical Sciences Program (2004 – 2013)

Physiology and Biophysics Program (2006 – 2013)

Biomedical Sciences Program (2006 – present)

Reproductive Sciences Program (2010 – 2013)

Integrative Physiology (2013 – present)

Mentor Affiliate with Institutional Training Programs

Metabolism, Obesity, and Diabetes (T32), Nutrition (T32), Aging (T32), BIRCWH (K12, Women's Health), CCTSI (T32/K12)

FANCLUB - Fatty Acid and Carbohydrate Lover's Unite and Bond

Faculty Sponsor (2007 – 2008)

Journal club for graduate students and post-docs

Co-Director of the Program in Nutrition and Metabolic Systems, Graduate Program in Integrative Physiology (novel program developed in 2014)

Research Mentoring

**denotes trainees that are minority or from disadvantaged backgrounds*

Undergraduate Students

*Jordan Houser, GEMS Program/LABCOATS Student Researcher
Mentor (2009-2012)

*Robera Oljira, Undergraduate Student Researcher
Mentor (2014 – 2017)
Emerging Leader in Nutrition Research, American Society for Nutrition
Full-Ride Scholarship to the Geffen UCLA School of Medicine
Current Position: Clinical Instructor, UCSF Medical Center

*Angelica Nieves-Rivera, Endocrine Society Minority Fellowship
Mentor (2014)

*Aneshiwa Senior, Endocrine Society Minority Fellowship
Mentor (2015)

Abigail Leigh Joy, Cancer Biology Summer Fellowship
Mentor (2015)

Graduate Students

Russell Marians, PhD; Dissertation Committee (2003-2005; Reproductive Sciences)
Current Position: Associate Director of Cell Therapy Analytical Development, Gates
Biomanufacturing Facility

Kimberly Ngo, Summer Medical Student Research Internship (2005)
Current position: practicing physician

Elizabeth Tarbutton, PhD; Dissertation committee (2005-2008; Cancer Biology)
Current position: Charter School Teacher

Kaitlyn Gilman, Summer Medical Student Research Internship (2006)
Current position: practicing physician

Sarah Werner, Biomedical Science Program Rotation (2006)

Rachel Lindstrom, PhD; Graduate Committee (2006-2008; UC Boulder, Physiology)
Current position: Sr. Medical Director, Metsera

Amy Steig, PhD; Mentor (2007-2009; Physiology and Biophysics)
Current position: Clinical Research Director, Samsung Research America

Jessica Wahlig, PhD; Co-Mentor (2008-2011; Reproductive Sciences)
CCTSI TL1 Fellowship
Post-doctoral fellowships at U Arkansas and Washington U
Current Position: Associate Director of Scientific Affairs Women's Health, Naterra

*Shannon Domarski, MS; Co-mentor (2008-2009; UC Boulder, Physiology)
Current Position: Homesmart Realty Photographer

Kristen Rumer-Gloor, MD/PhD; Dissertation Committee (2008-2010; Reproductive Sciences)
CCTSI TL1 Fellowship
Current Position: practicing physician

Margaret Heerwagen, PhD; Dissertation Committee (2009-2013; Reproductive Sciences)

CCTSI TL1 Fellowship
 Current Position: practicing physician

Amanda Crunk, PhD; Dissertation Committee (2011-2013; Reproductive Sciences)
 Postdoctoral fellowship, Duke University
 Current Position: Scientific Advisor, RP SciCom LLC

Erika Goddard, PhD; Dissertation Committee (2013-2015; Cancer Biology)
 Current Position: unknown

Valerie Barton, PhD; Dissertation Committee (Cancer Biology; 2013 – 2016)
 Current Position: Implementation Training Specialist

Stephano Guidotti, PhD; Dissertation Defense Panel, University of Groningen (2013)
 Current Position: General Manager, Farmacia S. Antonio

Xu Meng, PhD; Dissertation Defense Panel University of Sydney (2013)
 Current Position: Scientific Advisor

*Rebecca Foright, PhD; Mentor (2014-2019; Integrative Physiology)
 Endocrine Summer Fellowship
 CCTSI TL1 fellowship
 NIH/NRSA F31 Award
 Current Position: Scientific Writer

*Diego Grinman, PhD; Visiting PhD Mentor (2014, University of Argentina)
 Bec.as-Fullbright Argentine Presidential Fellowship
 Current Position: Post-doctoral fellow, DKFZ cancer research center

Taylor Soderberg, MD/PhD; Dissertation Committee Chair (2016-2018, Integrative Physiology)
 Current Position: Executive Director, Tiny Health Biomedical

*David Presby, PhD; Mentor (2014-2019; Integrative Physiology)
 National Science Foundation Minority Fellowship
 CCTSI TL1 fellowship
 BEST International Travel Award
 Current Position: Executive Director, Tiny Health Biomedical

Darcy Kahn, PhD; Committee Chair (2019-2022, Integrative Physiology)
 PhD rotation mentor (2017)
 Current Position: Senior Scientist, Mosaic Biosciences

Olivia McGinn, PhD; Committee (2017-2019 Cancer Biology)
 Current Position: Post Doctoral Fellow, U Pitt

Lyndsey Crump, PhD; Committee (2017-2019; Cancer Biology)
 Current Position: Senior Scientist, TrAMPoline Pharma Inc

Michael Nash, PhD; Committee Chair (2019-2022, Integrative Physiology)
 NORC Outstanding Graduate Student Award 2022
 Current Position: Resident, David Geffen School of Medicine, UCLA

Jared Dahl, PhD; Committee Chair (2019-2021, Integrative Physiology)
 Current Position: Faculty Educator, US Air Force

Rosie McDonald, PhD; Co-mentor with Raj Kumar (2019-2023)
 NIH NRSA F31
 Current Position: Medical Science Liaison, Biogen

Ashley Ward, PhD; Co-mentor with Carol Sartorius (2019-2023, Cancer Biology)
 NIH NRSA F31
 Current Position: Scientist, iQ Biosciences

*Beatriz Bermudez, PhD; Dissertation Committee (2019 – 2023, Mechanical Engineering)
 Current Position: Scientific Writer, Inotiv

Karli Swenson PhD; Dissertation Committee (2020-2023, Integrative Physiology)
 Current Position: Postdoctoral Fellow, Children’s Hospital Colorado

Nicholas Hulett, PhD Committee Chair (2022-present, Integrative Physiology)
 PhD rotation mentor (2021)

*Matthew Breit, PhD Committee Chair (2022-present, Integrative Physiology)
 PhD rotation mentor (2021)
 Outstanding Graduate Student, Colorado NORC 2023

Tyler Dobbs, PhD; Dissertation Committee (2023-2025, Integrative Physiology)
 T32 Nutrition
 NIH NRSA F31
 Current Position: Postdoctoral Fellowship, AdventHealth Research Institute

Francesca Cendali, PhD Committee Chair (2023-2025, Integrative Physiology)
 Outstanding Graduate Student, Colorado NORC 2024
 Current Position: Postdoctoral Fellow, CU-AMC

Post-Doctoral and Resident Fellows

Carrie McCurdy, PhD Fellow (Friedman-Nutrition/Pediatrics)
 Advisory Committee for NRSA F32 (2004-2007)
 NIH K01 Award
 NIH R01 Award
 Current position: Assistant Professor, University of Oregon

Matthew Jackman, PhD Fellow (MacLean-Endocrinology)
 Mentor (2006-2008)
 Current position: Senior Instructor, University of Colorado

Heather Brooks, MD Fellow (Kohrt- Endocrinology/Geriatrics)
 Advisory Committee (2007 – 2009)
 Endocrine T32 fellowship
 NIH K08 fellowship
 Current position: practicing physician

Erin Giles, PhD Fellow (MacLean- Endocrinology)
 Mentor (2008-2016)
 Thorkildenson Fellowship
 American Institute for Cancer Research Fellowship
 NORC Pilot Award
 NIH K99/R00 Award
 Center for Women’s Health Development Award
 NIH/NCI R01 Award
 Current Position: Associate Professor, U Michigan

Audrey Bergouignan, PhD Fellow (Bessesen, Hill, MacLean- Endocrinology)
 Co-mentor (2009-2016)
 NORC Pilot Award
 CCTSI Pilot Award
 NIH K99/R00 Awardee
 NIH R01 Award

Current Position: Associate Professor, CU
 Susan Soto, MD Fellow (Brown/Rozance- Pediatrics/Neonatology)
 Neonatology T32 Fellowship
 Advisory Committee (2009-2011)
 Sarit Polsky, MD Fellow (Hill/Wyatt- Endocrinology)
 Advisory Committee (2010-2013)
 Endocrine T32 Fellowship
 Current Position: clinician educator
 Kate Geary, Endocrine Fellow (Reusch- Endocrinology)
 Mentorship committee member (2012 – 2013)
 Current Position: practicing physician
 Michael Rudolph, PhD Fellow (MacLean- Endocrinology)
 Mentor (2013-2015)
 Neonatology T32 Fellowship
 NORC Pilot Award
 BIRCWH K12 Award
 NIH K01 Award
 Current Position: Assistant Professor, University of Oklahoma HSC
 *Vanessa Sherk, PhD Fellow (MacLean- Endocrinology)
 Mentor (2013-2017)
 Nutrition T32 post-doctoral fellowship
 Center for Women’s Health Development Award
 NORC Pilot Award
 Outstanding Trainee Award, Division of Endocrinology, 2017
 Current Position: NIH Scientific Review Officer
 Katy Brown, MD Fellow (Hill/Wyatt- Endocrinology)
 Advisory Committee (2013-2014)
 Current Position: clinical practice
 Matthew Morris, PhD Visiting Fellow (MacLean Endocrinology; Thyfault- U Missouri)
 Mentor (2013-2014)
 Current Position: Assistant Professor, University of Kansas Medical School
 Laura Allison Checkley, PhD Fellow (MacLean- Endocrinology)
 Mentor (2014-2018)
 Current Position: Senior Scientific Director, Lockwood
 Elizabeth Wellberg, PhD Fellow (Anderson/MacLean- Pathology)
 Co-mentor (2014-2015)
 Current Position: Associate Professor, University of Oklahoma HSC
 Shawna Matthews, PhD Fellow (Sartorius/MacLean – Pathology)
 Co-mentor (2015 – 2020)
 Endocrine T32 post-doctoral fellowship
 NIH NRSA F32 Award
 Current Position: Science Communications Specialist, Oxford PharmagGenesis
 Eric Bolf, PhD Fellow (Schweppe/Haugen/MacLean – Endocrinology)
 T32 fellowship
 Current Position: Scientist, Ring Therapeutics
 Andrew Libby, PhD Fellow (MacLean – Endocrinology)

Mentor (2021 – 2024)
 Endocrine T32 post -doctoral fellowship
 NORC Pilot Award
 CWHR Pilot Award
 CCTSI K12 Scholar
 Current Position: Assistant Professor, CU
 Lyndsey Dubose, MD Fellow (Moreau/MacLean – Geriatrics)
 Co-mentor (2020 – 2023)
 NRSA F32 Fellowship
 BIRCWH K12 Award
 Current Position: Assistant Professor, Colorado State University
 Paul Roberson, PhD Fellow (MacLean – Endocrinology)
 Mentor (2022-2024)
 NRSA F32 Fellowship
 NORC Pilot Award
 Current Position: Research Instructor, CU
 Emily Hill, PhD Fellow (Borengasser/Catenacci/MacLean)
 Co-mentor (2022 – 2026)
 CU Cancer Center - NORC Cancer-Metabolism Seed Grant
 NORC Pilot Award
 K99/R00
 NORC-ACCORDS IMPACT Award
 Molly McGuckin, PhD Fellow (Wesolowski)
 T32 Oversight Committee (2023-present, Neonatology)
 Sahar Toulabi, PhD; Mentor (2024 – present, CSU)
 USDA Research Fellowship

Junior Faculty

Carrie McCurdy, Assistant Professor, Pediatrics
 K01 Advisory Committee (2008-2012)
 NIH K01 Award
 NIH/NIDDK R01 Award
 Current position: Associate Professor, University of Oregon
 Hong Wang, Assistant Professor, Medicine/Endocrinology
 K12 Advisory Committee (2010-2015)
 Faculty Mentor (2014-2016)
 BIRCWH K12 Award
 NORC Pilot Award
 Current Position: Research Scientist, Fred Hutch Cancer Center
 Zhilin Song, Assistant Professor, Medicine/Endocrinology
 Faculty mentor (2014-2017)
 AHA Career Development Award
 NORC Pilot Award
 Elizabeth Wellberg, Assistant Professor, Pathology
 Faculty mentor (2015-present)
 NORC Pilot Award

BIRCWH Pilot Award
 Komen Career Catalyst Research Project Award
 CCTSI KL2 Career Development Award
 NIH/NCI R01
 Current position: Assistant Professor, University of Oklahoma HSC
 Michael Rudolph, Assistant Professor, Medicine/Endocrinology
 Faculty mentor (2015-present)
 Neonatology T32 Fellowship
 NORC Pilot Award
 BIRCWH K12 Award
 NIH K01 Award
 NIH R03 Award
 Current position: Assistant Professor, University of Oklahoma HSC
 Bridgette Young, Assistant Professor, Pediatric Nutrition
 Faculty mentor (2016-2018)
 NORC Pilot Award
 NIH K01 Award
 Current position: Assistant Professor, University of Rochester
 Christine Swanson, Assistant Professor, Medicine/Endocrinology
 Mentorship Committee (2016-2021)
 NIH K23 Award
 NIH R01
 Current Position: Association Professor, CU-AMC
 *Vanessa Sherk, Assistant Professor, Orthopedics
 Faculty mentor (2017-2021)
 Center for Women's Health Development Award
 NORC Pilot Award
 CCTSI Microgrant
 CCTSI KL2 Career Development Award
 ASBMR Rising Star
 Current position: NIH Scientific Review Officer
 Rebecca Scalzo, PhD; Assistant Professor, Medicine/Endocrinology
 Faculty mentor (2018-2022)
 VA CDA2 Award
 Amy Keller, PhD; Assistant Professor, Medicine/Endocrinology
 Faculty mentor (2020-2023)
 VA CDA2 Award
 VA Merit Award
 Andrew Libby, PhD; Assistant Professor, Medicine/Endocrinology
 Mentor (2021 – present)
 Endocrine T32 post -doctoral fellowship
 NORC Pilot Award
 CWHR Pilot Award
 SCORE Scholar Award
 CCTSI K12 Career Development Award
 Paul Roberson, PhD; Research Instructor, Medicine/Endocrinology

Mentor (2022 – present)
NRSA F32 Fellowship
NORC Pilot Award
U54 SCORE Research Scholar Award