

**BIOGRAPHICAL SKETCH**

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NAME: Seth A. Creasy

eRA COMMONS USER NAME (credential, e.g., agency login): SCREASY

POSITION TITLE: Assistant Professor

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.*)

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
Lock Haven University	B.S.	05/2012	Health and Physical Education
University of Pittsburgh	M.S.	08/2013	Health and Physical Activity
University of Pittsburgh	Ph.D.	08/2016	Exercise Physiology
University of Colorado - Anschutz	Postdoc	01/2019	Energy Metabolism

**A. Personal Statement**

I am an Associate Professor at the University of Colorado Anschutz Medical Campus (**CU AMC**) in the Division of Endocrinology, Metabolism, and Diabetes and the Director of Research Integration in the Anschutz Health and Wellness Center (**AHWC**). For the Colorado Nutrition Obesity Research Center (**NORC**), I serve as the Associate Director of the Energy Balance Assessment core, overseeing Doubly Labeled Water (DLW) measurements. I currently hold an NIH Career Development Award (K01 HL145023), an R56 (DK136601), and serve as co-investigator on two R01s investigating the extent to which patterns and timing of behaviors (physical activity, food intake, and sleep) influence energy metabolism, body weight regulation, and disease risk (e.g., obesity, type 2 diabetes, cardiovascular disease). Over the past 5 years, one of my focuses has been understanding the complex interplay between exercise and circadian physiology. In particular, I have focused on how exercise timing influences central and peripheral clock rhythms and how this may, in turn, affect energy balance, glucose regulation, and body weight regulation. We conducted one of the first analyses identifying time of day of exercise (i.e., morning vs. evening) as an important factor that influences changes in body composition, beyond the effect of the exercise dose. Since that publication, our group has published 3 additional manuscripts (2 original research, 1 review) on important considerations related to exercise timing and exercise timing consistency in weight management research.

Ongoing projects that I would like to highlight include:

**NIH R56DK136601 (PI: Creasy, SA)**

09/01/2023 – 08/31/2024

Examining Time and Nutrient Dependent Effects of Aerobic Exercise on Energy Metabolism in Adults with Overweight and Obesity

(Team members that overlap with current proposal: **Borengasser, Catenacci, Melanson, Pan, Wright**)

Overview: The goal of this project is to begin examining the effects of morning/evening and fasted/fed aerobic exercise on substrate metabolism, energy expenditure, and metabolites in adults with overweight and obesity.

**CU AMC Translational Research Scholars Program (PI: Creasy, SA)**

07/01/23 – 06/30/27

Chrono-exercise: Time-dependent targets and mechanisms to optimize the effectiveness of exercise for treating metabolic diseases

(Team members that overlap with current proposal: **Broussard, Catenacci, Melanson, Wright**)

Overview: The goal of this project is to integrate whole-body and tissue-specific metabolic responses to short-term manipulations in exercise and meal timing to treat various chronic metabolic conditions.

**NIH R01DK126814** (PI: Catenacci, VA)

08/16/21 – 06/30/26

Does When You Exercise Matter? A Randomized Trial Comparing the Effect of Morning versus Evening Aerobic Exercise on Weight Loss and Compensatory Behaviors

(Team members that overlap with current proposal: **Catenacci, Melanson**)

Overview: The goal of this project is to compare weight loss generated by an energetically matched amount of morning versus evening aerobic exercise in adults with overweight and obesity.

Role: *Co-Investigator*

**NIH P30 DK048520** (PI: MacLean, PS)

01/01/97 – 07/31/25

Colorado Nutrition Obesity Research Center

(Team members that overlap with current proposal: **Broussard, Catenacci, Melanson, Pan**)

Overview: The mission of the Colorado NORC is to advance the science of nutrition and obesity by facilitating interdisciplinary, collaborative, translational research and by fostering the development of the next generation of scientists in the Rocky Mountain region.

Role: *Assistant Director of Energy Balance Assessment Core*

**NIH K01HL145023** (PI: Creasy, SA)

02/01/19 – 01/31/24

Linking Temporal Aspects of Modifiable Behaviors to Weight Loss Outcomes

(Team members that overlap with current proposal: **Catenacci, Melanson, Wright**)

Overview: The goal of this project is to examine the effect of physical activity, sleep, and food intake patterns (timing and consistency) on bodyweight regulation.

**NIH R01DK111622** (PI: Catenacci, VA)

09/15/2017 – 06/30/2024

Comparison of Weight Loss Induced by Intermittent Fasting Versus Daily Caloric Restriction in Individuals with Obesity: A 1-Year Randomized Trial

(Team members that overlap with current proposal: **Catenacci, Melanson, Pan**)

Overview: A 1-year randomized trial that will compare the effects of intermittent fasting versus daily caloric restriction on body weight, body composition, metabolic parameters, energy intake, dietary behaviors, energy, expenditure and free-living physical activity.

Role: *Co-Investigator*

Citations highlighting our experience and recent collaboration of the proposed team (Co-Is in bold):

- a. **Creasy SA**, Wayland L, Panter SL, Purcell SA, Rosenberg R, Willis EA, Shiferaw B, Grau L, Breit MJ, Bessesen DH, **Melanson EL**, **Catenacci VA**. (2022) Effect of Morning and Evening Exercise on Energy Balance: A Pilot Study. *Nutrients*. 14(4): 816.
- b. Blankenship JM, Rosenberg RC, Rynders CA, **Melanson EL**, **Catenacci VA**, **Creasy SA**. Examining the Role of Exercise Timing in Weight Management: A Review. *Int J Sports Med*. 2021 May 25;. doi: 10.1055/a-1485-1293. [Epub ahead of print] [PubMed PMID: 34034354](https://pubmed.ncbi.nlm.nih.gov/34034354/).
- c. **Creasy SA**, Hibbing PR, Cotton E, Lyden K, Ostendorf DM, Willis EA, **Pan Z**, **Melanson EL**, **Catenacci VA**. Temporal patterns of physical activity in successful weight loss maintainers. *Int J Obes (Lond)*. 2021 Sep;45(9):2074-2082. doi: 10.1038/s41366-021-00877-4. Epub 2021 Jun 14. [PubMed PMID: 34127805](https://pubmed.ncbi.nlm.nih.gov/34127805/).
- d. **Creasy SA**, Crane TE, Garcia DO, Thomson CA, Kohler LN, Wertheim BC, Baker L, Coday M, Hale L, Womack CR, **Wright KP**, **Melanson EL**. Higher amounts of sedentary time are associated with short

sleep duration and poor sleep quality in postmenopausal women. *Sleep*. 2019 Apr 17; doi: 10.1093/sleep/zsz093. [Epub ahead of print] [PubMed PMID: 30994175](#).

## B. Positions, Scientific Appointments, and Honors

### Positions:

2012-2013 Graduate Student Assistant, University of Pittsburgh  
2013-2016 Graduate Student Researcher, University of Pittsburgh  
2016-2019 Postdoctoral Fellow, University of Colorado- Anschutz Medical Campus  
2019- Assistant Professor, University of Colorado- Anschutz Medical Campus  
2019- Assistant Director, DLW Isotope Core, University of Colorado- Anschutz Medical Campus  
2024- Director, Research Integration, Anschutz Health and Wellness Center

### Scientific Appointments and Professional Memberships:

2013- Member, The American College of Sports Medicine  
2013- Certified Clinical Exercise Physiologist (ACSM CEP), American College of Sports Medicine  
2014- Member, The Obesity Society  
2015-16 Early Career Representative, The Obesity Society, Ehealth/Mhealth Section  
2019 Ad hoc Reviewer for NIH Music and Health Special Emphasis Panel Study Section  
2019- Member, American College of Sports Medicine Strategic Health Initiative- Obesity Committee

### Honors:

2014 Young Investigator Travel Award, The Obesity Society  
2015 The Karl C. H. Oermann and Kenneth F. Metz Endowed Scholarship, University of Pittsburgh  
2016 Robert J. Robertson Outstanding Doctoral Student Award, University of Pittsburgh  
2016 Top 10 Abstract- Biobehavioral Research Section, The Obesity Society  
2017 Research Endowment, American College of Sports Medicine  
2018 Outstanding Trainee, University of Colorado- Anschutz Medical Campus, Department of Medicine, Division of Endocrinology, Metabolism, and Diabetes  
2023 Translational Research Scholars Program, University of Colorado- Anschutz Medical Campus

## C. Contributions to Science

**I. Patterns of Physical Activity and Weight Management:** One area of my research focuses on identifying novel dietary and physical activity (PA) strategies to improve weight loss in adults. During my graduate work with John Jakicic, PhD, I performed a secondary data analysis on objective PA data for 363 participants who completed an 18-month weight loss intervention. We found that individuals who achieved >10% weight loss were taking ~10,000 steps/day but more importantly they accumulated 35% of these steps at moderate intensity in bouts >10 minutes. I then translated this finding into a step per day recommendation and showed that it was a feasible and effective recommendation for individuals enrolled in a behavioral weight loss intervention. More recently, I have been focusing on how the timing and pattern of food intake, PA, and sleep influence weight loss and weight loss maintenance. In collaboration with Dr. Victoria Catenacci (Co-I), I examined how PA bout patterns and the timing of PA vary between a cohort of weight loss maintainers (WLM) compared to controls with (OC) and without obesity (NC). We found that WLM are highly active (>60 min of MVPA/d) on ~5 days per week, WLM engage in significantly more MVPA in the morning, and WLM engage in significantly more MVPA in bouts of ≥10 minutes. I also collaborated with Drs. Erik Willis and Joseph Donnelly to perform a secondary data analysis from the Midwest Exercise Trial 2 to identify the importance of exercise timing for weight loss. We found that morning exercisers lost significantly more weight ( $-7.2 \pm 3.5\%$ ) compared to evening exercisers ( $-2.1 \pm 3.5\%$ ), despite similar levels of exercise adherence and exercise energy expenditure (EE). Following that secondary data analysis, I led a pilot study examining the effect of morning versus evening exercise on changes in weight, body composition, and components of energy balance. That study served as preliminary data for an R01 DK126814 (PI Catenacci) on which I am a co-investigator. In sum, this body of work demonstrates my commitment to identifying strategies that improve the weight loss response to dietary/PA interventions.

- a. **Creasy SA**, Lang W, Tate DF, Davis KK, Jakicic JM. Pattern of daily steps is associated with weight loss: secondary analysis from the step-up randomized trial. *Obesity (Silver Spring)*. 2018 Jun;26(6):977-984. doi: 10.1002/oby.22171. [PubMed PMID: 29633583](#).

- b. **Creasy SA**, Rogers RJ, Davis KK, Gibbs BB, Kershaw EE, Jakicic JM. Effects of supervised and unsupervised physical activity programmes for weight loss. *Obes Sci Pract*. 2017 Jun;3(2):143-152. doi: 10.1002/osp4.107. [PubMed PMID: 28713583](#).
- c. **Creasy SA**, Hibbing PR, Cotton E, Lyden K, Ostendorf DM, Willis EA, Pan Z, Melanson EL, Catenacci VA. Temporal patterns of physical activity in successful weight loss maintainers. *Int J Obes (Lond)*. 2021 Sep;45(9):2074-2082. doi: 10.1038/s41366-021-00877-4. Epub 2021 Jun 14. [PubMed PMID: 34127805](#).
- d. Willis EA, **Creasy SA**, Honas JJ, Melanson EL, Donnelly JE. The effects of exercise session timing on weight loss and components of energy balance: midwest exercise trial 2. *Int J Obes (Lond)*. 2019 Jul 9;. doi: 10.1038/s41366-019-0409-x. [Epub ahead of print] [PubMed PMID: 31289334](#).

**II. Sleep, Sedentary Behavior, and Physical Activity:** Another area of my research focuses on understanding the 24h cycle of sleep/inactivity/activity and how each of these are related to weight management. My ultimate goal is to use objective monitors to assess 24h cycle of individuals seeking weight management therapy and use their individual data to create tailored interventions that will maximize weight loss success. As a first step, I collaborated with several investigators to examine the associations between sedentary behavior and PA with sleep duration/quality in the Women's Health Initiative. We found that women who had the highest amounts of sedentary behavior had higher odds of short sleep, subjective poor sleep quality and insomnia-related symptoms. PA was associated with reduced odds of poor sleep quality; however, the strength of the association was modest. I expanded upon these findings by examining how indices of sleep health influenced adherence to an 18-month behavioral weight loss intervention focused on increasing PA and reducing energy intake. I have also been interested in how other daily behaviors influence body weight regulation. As part of this work, our research team found investigated how free-living responses in energy balance in response to acute overfeeding was related to body weight regulation. We found that sedentary behavior following overfeeding predicted longitudinal weight gain but other variables such as PA did not. This finding, along with other recent literature, suggest that sedentary behavior may be important for weight management, although more work is needed.

- a. **Creasy SA**, Rynders CA, Bergouignan A, Kealey EH, Bessesen DH. Free-living responses in energy balance to short-term overfeeding in adults differing in propensity for obesity. *Obesity (Silver Spring)*. 2018 Apr;26(4):696-702. doi: 10.1002/oby.22121. [PubMed PMID: 29570248](#).
- b. **Creasy SA**, Crane TE, Garcia DO, Thomson CA, Kohler LN, Wertheim BC, Baker L, Coday M, Hale L, Womack CR, Wright KP, Melanson EL. Higher amounts of sedentary time are associated with short sleep duration and poor sleep quality in postmenopausal women. *Sleep*. 2019 Apr 17; doi: 10.1093/sleep/zsz093. [Epub ahead of print] [PubMed PMID: 30994175](#).
- c. Blankenship JM, Rosenberg RC, Rynders CA, Melanson EL, Catenacci VA, **Creasy SA**. Examining the Role of Exercise Timing in Weight Management: A Review. *Int J Sports Med*. 2021 May 25;. doi: 10.1055/a-1485-1293. [Epub ahead of print] [PubMed PMID: 34034354](#).
- d. Catenacci VA, Ostendorf DM, Pan Z, Bing K, Wayland LT, Seyoum E, Stauffer BL, Phelan S, **Creasy SA**, Caldwell AE, Wyatt HR, Bessesen DH, Melanson EL. The impact of timing of exercise initiation on weight loss: an 18-month randomized clinical trial. *Obesity (Silver Spring)*. 2019 Nov;27(11):1828-1838. doi: 10.1002/oby.22624. Epub 2019 Sep 29. [PubMed PMID: 31565869](#).

**III. Assessment of Energy Expenditure:** As an exercise physiologist, I have been utilizing indirect calorimetry to assess EE during various states of activity/inactivity for >8 years. I have contributed to the growing body of literature on the EE of sitting vs. standing; and I was a co-investigator on a study examining the EE of vinyasa yoga. Interestingly we found that vinyasa yoga, a more intense version of yoga does elicit changes in EE which would classify it as moderate intensity physical activity. More recently, I was mentored by Dr. Edward Melanson on the measurement of total daily energy expenditure (TDEE) using the DLW method. Dr. Melanson's laboratory validated a laser-based off-axis cavity output spectroscopy (OA-ICOS) system for measuring water isotopes as an alternative to isotope ratio mass spectroscopy (IRMS). The OA-ICOS is significantly cheaper to use and has the capability of higher throughput compared to IRMS. Dr. Melanson and his collaborators showed that the OA-ICOS provided highly accurate and precise measurements of deuterium (2H) and 18O in water and urine across various abundances. I assisted with the initial validation of the OA-ICOS for measuring DLW samples in group of 17 adults. In that study, TDEE was measured over 7 days using the DLW method with urine samples analyzed by OA-ICOS and IRMS. TDEE for both methods were validated against whole-room calorimetry, the gold-

standard, finding no differences between all three methods. Since that validation, Dr. Melanson's DLW laboratory has expanded into a DLW Isotope Core of which I was named the Assistant Director. Over the past 3 years, I have been integrally involved in processing and analyzing DLW samples in our Core. This work has resulted in three co-author manuscripts on the measurement of TDEE with several others in progress.

- a. Ostendorf DM, Caldwell AE, **Creasy SA**, Pan Z, Lyden K, Bergouignan A, MacLean PS, Wyatt HR, Hill JO, Melanson EL, Catenacci VA. Physical activity energy expenditure and total daily energy expenditure in successful weight loss maintainers. *Obesity (Silver Spring)*. 2019 Mar;27(3):496-504. doi: 10.1002/oby.22373. [PubMed PMID: 30801984](#).
- b. Melanson EL, Swibas T, Kohrt WM, Catenacci VA, **Creasy SA**, Plasqui G, Wouters L, Speakman JR, Berman ESF. Validation of the doubly labeled water method using off-axis integrated cavity output spectroscopy and isotope ratio mass spectrometry. *Am J Physiol Endocrinol Metab*. 2018 Feb 1;314(2):E124-E130. doi: 10.1152/ajpendo.00241.2017. Epub 2017 Oct 3. [PubMed PMID: 28978547](#).
- c. Speakman JR, Yamada Y, Sagayama H, Berman ESF, Ainslie PN, ...**Creasy SA**,... Wong WW. A standard calculation methodology for human doubly labeled water studies. *Cell Rep Med*. 2021 Feb 16;2(2):100203. doi: 10.1016/j.xcrm.2021.100203. eCollection 2021 Feb 16. [PubMed PMID: 33665639](#).
- d. **Creasy SA**, Rogers RJ, Byard TD, Kowalsky RJ, Jakicic JM. Energy expenditure during acute periods of sitting, standing, and walking. *J Phys Act Health*. 2016 Jun;13(6):573-8. doi: 10.1123/jpah.2015-0419. Epub 2015 Dec 21. [PubMed PMID: 26693809](#).

**A List of my PubMed Publications can be viewed here:** [My Bibliography](#)