

**BIOGRAPHICAL SKETCH**

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NAME: Bessesen, Daniel

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

POSITION TITLE: Professor of Medicine, Division of Endocrinology

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
Colorado State University, Ft. Collins, Colorado	BS	06/1978	Chemistry
University of Colorado Health Sciences Center, Denver, Colorado	MD	05/1982	Medicine
University of Colorado Health Sciences Center, Denver, Colorado	Resident	06/1986	Internal Medicine
University of Colorado Health Sciences Center, Denver, Colorado	Fellow	06/1990	Endocrinology, Metabolism and Diabetes

**A. Personal Statement**

**Research Activities:** My role in the NORC is to facilitate the development of our junior investigators through the Pilot Project Program and as the Associate Director, to facilitate team clinical science through fostering collaborative research at the AHCW and clinical research groups affiliated with the NORC. My research group has conducted studies relating to the regulation of body weight and the clinical problem of obesity for more than 30 years. Our studies have examined the basic physiological mechanisms involved in the regulation of body weight using a strategy of measuring responses in appetite, metabolism and energy expenditure to interventions that alter energy balance (overfeeding, underfeeding, reduced or increased physical activity) in animals or human subjects that vary in their propensity to gain weight (naturally thin/obesity resistant, obesity prone, reduced obese). We have used a range of tools for these studies including indirect calorimetry (hood and room), functional brain imaging, controlled feeding studies, direct measures of physical activity, doubly labeled water, tracer measures of nutrient metabolism and metabolite turnover, analysis of cellular responses in skeletal muscle and adipose tissue to name a few. I am currently PI of an R01 evaluating adaptive responses to overfeeding during weight loss maintenance following weight loss in adults in overweight and obesity (R01 DK114272 NCE). I am also currently PI on three industry sponsored clinical trials of newer highly effective antiobesity medications including semaglutide/cagrilintide, retatrutide and tirzepatide. I have also served as an Associate Director of the Colorado Nutrition Obesity Research Center (NORC) for the last 14 years and previously served as the director of the NORC Clinical Intervention and Translation (CIT) Core. I am currently the Director of the Anschutz Health and Wellness Center (AHCW) which is a research resource for UC. I previously served on the Clinical and Integrative Diabetes and Obesity study section of the NIH and Chaired this study section in 2011-12.

**Training Activities:** These activities demonstrate my long term commitment to the development of young investigators. I was the Associate Director of T32DK007446 which supported research training in endocrinology and metabolism from 1992-2015 and then PI from 2014-2017. I was the Associate Fellowship Program Director of the Endocrine Training Program at the University of Colorado from 1992- 2006, and then was the Fellowship Program Director from 2007-2019. I have been PI of T32 DK120521: *Research Training Program in Metabolism, Obesity and Type 2 Diabetes* since 2020. I established and have been the Program Director for the Colorado Obesity Medicine Fellowship Program since 2019. I served on the NIDDK-C study section of which I was Chair in 2006-7. I have also directed the Pilot Project Program of the NORC for the last

15 years. This program provides initial funding for trainees and junior investigators. I have personally mentored 20 post-doctoral fellows of whom 10 have received K awards and 8 have received R00 or R01 awards as PIs

1. Amar D, Gay NR, Jimenez-Morales D, Jean Beltran PM, Ramaker ME, Raja AN, Zhao B, Sun Y, Marwaha S, Gaul DA, Hershman SG, Ferrasse A, Xia A, Lanza I, Fernández FM, Montgomery SB, Hevener AL, Ashley EA, Walsh MJ, Sparks LM, Burant CF, Rector RS, Thyfault J, Wheeler MT, Goodpaster BH, Coen PM, Schenk S, Bodine SC, Lindholm ME. The mitochondrial multi-omic response to exercise training across rat tissues. *Cell Metab.* 2024 Jun 4;36(6):1411-1429.e10. PubMed Central PMCID: PMC11152996.
2. Libby AE, Solt CM, Jackman MR, Sherk VD, Foright RM, Johnson GC, Nguyen TT, Breit MJ, Hulett N, Rudolph MC, Roberson PA, Wellberg EA, 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.* 2024 May 1;326(5):E626-E639. PubMed Central PMCID: PMC11208003.
3. Creasy SA, Ostendorf DM, Blankenship JM, Grau L, Arbet J, Bessesen DH, Melanson EL, Catenacci VA. Effect of sleep on weight loss and adherence to diet and physical activity recommendations during an 18-month behavioral weight loss intervention. *Int J Obes (Lond).* 2022 Aug;46(8):1510-1517. PubMed Central PMCID: PMC9850430.
4. Le Roux E, De Jong NP, Blanc S, Simon C, Bessesen DH, Bergouignan A. Physiology of physical inactivity, sedentary behaviours and non-exercise activity: insights from the space bedrest model. *J Physiol.* 2022 Mar;600(5):1037-1051. PubMed Central PMCID: PMC10895929.

## **B. Positions, Scientific Appointments and Honors**

### **Positions and Scientific Appointments**

2019 -	Director, Anschutz Health and Wellness Center, Denver, CO
2019 -	Anschutz Foundation Endowed Chair in Health and Wellness, University of Colorado, School of Medicine, Denver, CO
2016 - 2018	Interim Director, Anschutz Health and Wellness Center, Denver, CO
2007 -	Professor of Medicine, Division of Endocrinology, University of Colorado Health Sciences Center, Denver, CO
2000 - 2007	Associate Professor of Medicine, Division of Endocrinology, University of Colorado Health Sciences Center, Denver, CO
1999 -	Head Section of Endocrinology, Denver Health Medical Center, Denver, CO
1999 -	Associate Director, Colo. Center for Human Nutrition/Anschutz Health and Wellness Center, Denver, CO
1992 - 2000	Assistant Professor of Medicine, Division of Endocrinology, University of Colorado Health Sciences Center, Denver, CO
1991 - 1992	Instructor in Medicine and Staff Endocrinologist, Denver General Hospital, Denver, CO

### **Other Experience and Professional Memberships**

1991 - 2006	Associate Program Director, Fellowship Training Program in Endocrinology, Metabolism and Diabetes, University of Colorado, Denver CO
1992 - 2019	Staff Endocrinologist, Division Head Endocrinology, Denver Health Medical Center
2002 - 2006	Member, NIH-NIDDK Digestive Diseases and Nutrition C Subcommittee
2003 - 2003	Member, NIH-NIDDK ad hoc ZDK1 GRB-4 Bariatric Surgery Clinical Research Consortium
2005 -	Reviewer, NIH Loan Repayment Program, ZDK1 GRB-N M3
2005 - 2005	Member, NIH LABS Protocol Review Committee
2005 - 2005	Member, NIH NHLBI Working Group on Clinical Education Needs for Obesity and Nutrition
2006 - 2007	Chair, NIH-NIDDK Digestive Diseases and Nutrition C Subcommittee
2006 - 2015	Member, NIH LABS Data Safety Monitoring Committee
2008 - 2011	Member, NIH-NIDDK CIDO Study Section

2008 - 2019	Program Director, Fellowship Training Program in Endocrinology, Metabolism and Diabetes, University of Colorado, Denver CO
2011 - 2012	Chair, NIH-NIDDK CIDO Study Section
2019 -	Member, NIH SBIR panel for ZRG1 RPHB-Z(10)
2019-	Program Director, Fellowship Training Program in Obesity Medicine, University of Colorado, Denver Colorado
2020- 2024	Vice President, President Elect, President, Past President, The Obesity Society

### **Honors**

2023	Florence Rena Sabin Award for Exceptional Contributions to the Health of the Citizens of Colorado, University of Colorado
2011	Physician Nutrition Specialist Award, American Society of Nutrition
2008	Kaiser-Permanente Teaching Award (Basic Science), University of Colorado, School of Medicine
2008	The Roland L. Weinsier Award for Excellence in Medical/Dental Nutrition Education , American Society of Nutrition
1995	Kaiser-Permanente Teaching Award (Clinical Sciences), University of Colorado, School of Medicine
1981	Alpha Omega Alpha, University of Colorado Health Sciences Center

### **C. Contribution to Science**

- I have worked for more than 30 years on studies involving the trafficking of dietary fat and the role that differences in fat metabolism play in the development and maintenance of obesity. I have conducted studies in animal models of obesity, reduced obesity and constitutional thinness. I have conducted studies in human subjects combining metabolic tracers with room calorimetry and tissue biopsies in men, women, obese, lean, reduced obese and constitutionally thin individuals following overfeeding, exercise, and underfeeding. The energy balance across time study (EATS, R01 DK62874) examined the relationship between physiological responses to overfeeding and weight change measured longitudinally over 5 years in obesity prone and obesity resistant men and women.
  - 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. PubMed Central PMCID: PMC5868430.
  - Rynders CA, Bergouignan A, Kealey E, Bessesen DH. Ability to adjust nocturnal fat oxidation in response to overfeeding predicts 5-year weight gain in adults. *Obesity (Silver Spring)*. 2017 May;25(5):873-880. PubMed Central PMCID: PMC5407418.
  - Bergouignan A, Kealey EH, Schmidt SL, Jackman MR, Bessesen DH. Twenty-four hour total and dietary fat oxidation in lean, obese and reduced-obese adults with and without a bout of exercise. *PLoS One*. 2014;9(4):e94181. PubMed Central PMCID: PMC3979741.
  - Schmidt SL, Kealey EH, Horton TJ, VonKaenel S, Bessesen DH. The effects of short-term overfeeding on energy expenditure and nutrient oxidation in obesity-prone and obesity-resistant individuals. *Int J Obes (Lond)*. 2013 Sep;37(9):1192-7. PubMed Central PMCID: PMC3770765.
- I have conducted studies on nutrient sensing and appetite in animal models of obesity and human subjects. Studies in animals focused on the role of LPL in the brain in the uptake of dietary fat by brain regions. With my former fellow now colleague Dr. Cornier, we have conducted human studies using functional brain imaging to measure regional blood flow in response to food related stimuli in lean, obese, reduced obese and constitutively thin individuals following over and underfeeding.
  - Legget KT, Cornier MA, Bessesen DH, Mohl B, Thomas EA, Tregellas JR. Greater Reward-Related Neuronal Response to Hedonic Foods in Women Compared with Men. *Obesity (Silver Spring)*. 2018 Feb;26(2):362-367. PubMed Central PMCID: PMC5783782.
  - Cornier MA, McFadden KL, Thomas EA, Bechtell JL, Bessesen DH, Tregellas JR. Propensity to obesity impacts the neuronal response to energy imbalance. *Front Behav Neurosci*. 2015;9:52. PubMed Central PMCID: PMC4341570.

- c. Cornier MA, Shott ME, Thomas EA, Bechtell JL, Bessesen DH, Tregellas JR, Frank GK. The effects of energy balance, obesity-proneness and sex on the neuronal response to sweet taste. *Behav Brain Res.* 2015 Feb 1;278:446-52. PubMed Central PMCID: PMC4382429.
  - d. Cornier MA, McFadden KL, Thomas EA, Bechtell JL, Eichman LS, Bessesen DH, Tregellas JR. Differences in the neuronal response to food in obesity-resistant as compared to obesity-prone individuals. *Physiol Behav.* 2013 Feb 17;110-111:122-8. PubMed Central PMCID: PMC3615115.
3. For the last 15 years, I have been involved in studies of the clinical care of patients with obesity. These investigations have been funded by the Patient Centered Outcomes Research Institute. One study that I was PI on was a pragmatic trial of a range of evidence-based weight loss treatments in a primary care setting. I was also part of the PCORnet project that used data from EMRs to answer clinical questions. We examined weight loss medication use in 8 large health care organizations across the country. These projects have given me experience in managing clinical trials and the use of large data sets to answer questions in obesity care.
    - a. Saxon DR, Iwamoto SJ, Mettenbrink CJ, McCormick E, Arterburn D, Daley MF, Oshiro CE, Koebnick C, Horberg M, Young DR, Bessesen DH. Antiobesity Medication Use in 2.2 Million Adults Across Eight Large Health Care Organizations: 2009-2015. *Obesity (Silver Spring).* 2019 Dec;27(12):1975-1981. PubMed Central PMCID: PMC6868321.
    - b. Saxon DR, Chaussee EL, Juarez-Colunga E, Tsai AG, Iwamoto SJ, Speer RB, Heyn H, Kealey EH, Bessesen DH. A Toolbox Approach to Obesity Treatment in Urban Safety-Net Primary Care Clinics: a Pragmatic Clinical Trial. *J Gen Intern Med.* 2019 Nov;34(11):2405-2413. PubMed Central PMCID: PMC6848318.
    - c. Lewis KH, Fischer H, Ard J, Barton L, Bessesen DH, Daley MF, Desai J, Fitzpatrick SL, Horberg M, Koebnick C, Oshiro C, Yamamoto A, Young DR, Arterburn DE. Safety and Effectiveness of Longer-Term Phentermine Use: Clinical Outcomes from an Electronic Health Record Cohort. *Obesity (Silver Spring).* 2019 Apr;27(4):591-602. PubMed PMID: 30900410.
    - d. Iwamoto S, Saxon D, Tsai A, Leister E, Speer R, Heyn H, Kealey E, Juarez-Colunga E, Gudzone K, Bleich S, Clark J, Bessesen D. Effects of Education and Experience on Primary Care Providers' Perspectives of Obesity Treatments during a Pragmatic Trial. *Obesity (Silver Spring).* 2018 Oct;26(10):1532-1538. PubMed Central PMCID: PMC6168402.
  4. I have been involved in academic work relating to the clinical problem of obesity. This work has involved co-authoring four textbooks on the evaluation and treatment of obesity, authoring invited reviews on topics related to obesity treatment and work on clinical guideline committees. I am currently chairing a group representing multiple specialty societies that is developing a "Standards of Care" document for the treatment of obesity
    - a. Henderson K, Lewis, Sloan CE, Bessesen DH, Arterburn D. Effectiveness and safety of drugs for obesity. *BMJ.* 2024 Mar 25;384:e072686. PubMed PMID: 38527759.
    - b. Tsai AG, Bessesen DH. Obesity. *Ann Intern Med.* 2019 Mar 5;170(5):ITC33-ITC48. PubMed PMID: 30831593.
    - c. Hudgel DW, Patel SR, Ahasic AM, Bartlett SJ, Bessesen DH, Coaker MA, Fiander PM, Grunstein RR, Gurubhagavatula I, Kapur VK, Lettieri CJ, Naughton MT, Owens RL, Pepin JL, Tuomilehto H, Wilson KC. The Role of Weight Management in the Treatment of Adult Obstructive Sleep Apnea. An Official American Thoracic Society Clinical Practice Guideline. *Am J Respir Crit Care Med.* 2018 Sep 15;198(6):e70-e87. PubMed PMID: 30215551.
    - d. Apovian CM, Aronne LJ, Bessesen DH, McDonnell ME, Murad MH, Pagotto U, Ryan DH, Still CD. Pharmacological management of obesity: an endocrine Society clinical practice guideline. *J Clin Endocrinol Metab.* 2015 Feb;100(2):342-62. PubMed PMID: 25590212.

**Complete List of Published Work in My Bibliography:** <https://www.ncbi.nlm.nih.gov/myncbi/1-91qywToDo5U/bibliography/public/>