

## Education and Training

- May, 2005      B. A. in Neuroscience, University of Virginia, Charlottesville, VA
- July, 2011      Ph.D. in Neuroscience, Northwestern University, Evanston, IL  
Concentration: Sleep & Circadian Rhythms  
Dissertation: Circadian Timing of Caloric Intake Contributes to Obesity
- Sept, 2011-  
Sept, 2014      Post-Doctoral Research Fellow  
Metabolic Diseases Institute  
University of Cincinnati  
*Gut-brain control of obesity and glucose metabolism*
- Sept, 2014-  
Nov, 2016      Post-Doctoral Research Fellow  
Department of Surgery  
University of Michigan  
*Neuronal mechanisms underlying obesity, sleep apnea, and circadian disruption.*

## Academic and Administrative Appointments

- Nov, 2016-  
Aug, 2017      Assistant Research Scientist  
Department of Surgery  
University of Michigan
- Aug, 2017-  
present      Assistant Professor  
Department of Biological Sciences  
Marquette University
- Sept, 2017-  
present      Assistant Adjunct Professor  
Clinical and Translational Science Institute  
Medical College of Wisconsin

## Certification

- 2010      Northwestern University's Searle Center for Teaching Excellence, Teaching Certificate

## Research Interests

1. Neuronal mechanisms underlying sleep apnea and obesity-associated disordered breathing
2. Photoperiodic effects on body weight homeostasis and the neuronal control of breathing
3. Metabolic consequences of intermittent hypoxia and/or circadian disruption

## Grants

### a) Active Grants

08/2017 – 07/2020

Agency: American Heart Association 17SDG33660108 (PI, Arble)

“The role of neuronal leptin in the pathogenesis, and treatment, of sleep apnea and cardiometabolic disease”

### b) Previously Funded Grants

09/2012 – 09/2014

Agency: NIH/NIDDK F32 DK097867 (PI, Arble)

“Circadian disruption and bariatric surgery: impact on metabolism, clock biology”

07/2010 – 07/2011

Agency: NIH/NIA F31 AG035621 (PI, Arble)

“Aging and meal timing interact to exaggerate weight gain”

## Honors and Awards

2015	Sleep Research Society Early Stage Career Stage Investigator Travel and Mentorship Award
2014	Society for Research of Biological Rhythms Travel Merit Award
2010	Society for Research of Biological Rhythms Travel Merit Award
2007	Society for Neuroscience Travel Award

## Membership in Professional Societies

2016-present	American Diabetes Association
2016-present	American Heart Association
2009-present	Sleep Research Society (SRS)
2008-present	Society for Research on Biological Rhythms (SRBR)
2007-present	Society for Neuroscience (SfN)

## Editorial Positions, Boards, and Peer-Review Service

### *Editorial Positions:*

Review Editor for *Frontiers in Neuroscience, Sleep & Circadian Biology* section (2018-present)

### *Peer-Review Service (yrs in service):*

Chronobiology International (2010), Obesity (2012), Molecular and Cellular Endocrinology (2012-present), Physiology & Behavior (2013-present), The Wellcome Trust (2013), Behavioral Brain Research (2013), Molecular Metabolism (2014-2017), Michigan Metabolomics and Obesity Center/Nutrition Obesity Research Center Pilot/Feasibility Grants (2014), Endocrinology (2015-present), USDA/ARS Governmental Grant Reviewer (2018)

## Teaching

<i>Table of Mentored Students</i>			
<b>Undergraduate Students (current or mentored for <math>\geq 2</math> semesters)</b>			
Name	Years Supervised	Relationship	Current Position
Carolyn Goldschmidt	2008-2010	Project Supervisor	Physician, neurology specialization
Sam Blair	2012	Project Supervisor	Medical Student, University of Cincinnati

Jeffrey Amoako	2012	Project Supervisor	Medical Student, Ohio State University
Suma Yalamanchili	2013	Project Supervisor	Resident, University of Cincinnati
Cameron Misko	2015-2017	Project Supervisor	Research Assistant, Center of Healthcare Engineering and Patient Safety
Ellen Bakke	2018-present	PI	Undergraduate student, Marquette University
Hannah Peterson	2018-present	PI	Undergraduate student, Marquette University
Nakia Chappelle	2018-present	PI	Undergraduate student, Marquette University
Eric Fellin	2018-present	PI	Undergraduate student, Marquette University
Kat Propsom	2018-present	PI	Undergraduate student, Marquette University
Lauren Nelson	2019-present	PI	Undergraduate student, Marquette University
Matt Muldoon	2019-present	PI	Undergraduate student, Marquette University
<b>Graduate Students (rotating graduate students not listed)</b>			
Ketrell McWhorter	2012	Project Supervisor	PostDoctoral Fellow, National Institute of Environmental Health Sciences
Sarah Framnes-DeBoer	2018-present	PI	PhD Graduate student, Marquette University
Aaron Jones	2019-present	PI	PhD Graduate student, Marquette University

#### *Intramural lectures and other teaching activities*

2019-present	Instructor: <i>BIOL8957 Circadian Control of Body Weight and Glucose Regulation</i> . Marquette University
2018-present	Co-Instructor: <i>NRSC8002 Neuroscience Foundations</i> . Marquette University
2017-present	Instructor: <i>BIOL4702 Experimental Physiology</i> . Marquette University
2018	Guest lecturer: On the topic of "Sleep and Circadian Rhythms" for <i>BIOL101 Introduction to Biology</i> . Marquette University
2017	Marquette University's Integrative Neuroscience Research Center lecture, "Using mouse models to uncover the brain's involvement in sleep apnea"
2010	Instructor: <i>Crime Scene Investigations: From True Science to TV Shows</i> . Northwestern University
2007	Teaching assistant: <i>Learning &amp; Memory</i> . Northwestern University
2006	Teaching assistant: <i>Animal Physiology</i> . Northwestern University

### **Committee, Organizational, and Volunteer Service**

#### *Institutional Service*

2019	Committee Chair, Summer Research Scholarship Review Committee.
2018-2019	Departmental Search Committee for "Microbiomics" tenure-track position.

- 2013 Organizing Committee Member of the “Cincinnati Diabetes and Obesity Center” 4<sup>th</sup> Annual Research Conference
- 2006-2011 Northwestern University Interdepartmental Neuroscience (NUIN) Program Recruitment Volunteer
- 2009-2010 BioOpportunities Vice President and Treasurer
- 2008-2009 BioOpportunities Committee Planner
- 2009 Northwestern Community Building Grant Receipt for “BioOpportunities”
- 2007-2008 NUIN Student Advisory Committee Member

#### *National Service*

- 2019 Workshop Co-Chair, “Hot Topics in Hypoxia” Experimental Biology Conference, Orlando, FL.
- 2018 Workshop Chair, “Managing a Successful Lab: Recruitment, Mentorship, and Conflict Resolution.” Society for Research on Biological Rhythms, Amelia Island, FL.
- 2017 Session Chair, “Antidiabetic Actions of Leptin in Insulin-Deficient Animal Models.” 77<sup>th</sup> Scientific Sessions of the American Diabetes Association, San Diego, CA.
- 2016 Workshop Chair, “Interview Skills & Preparing for the Transition from Postdoc to Independent Research.” Society for Research on Biological Rhythms, Palm Harbor, FL.

### **Consulting Positions**

- 2015 Circuit Therapeutics

### **Extramural Seminars and Invited Presentations**

- 2019 *Sleep, circadian rhythms, and obesity.* Invited presentation, Maximizing Access to Research Careers colloquium series, California State University. San Bernardino, CA.
- 2019 *Circadian disruption, sleep apnea, and metabolism: Insights from animal models.* Invited presentation, Ripon College. Ripon, WI.
- 2019 *A leptin-dependent mechanism links obesity to sleep disordered breathing.* Invited presentation, Center for Sleep and Circadian Biology, Northwestern University. Evanston, IL.
- 2016 *Circadian disruption, sleep apnea, and metabolism: Insights from animal models.* Symposium presentation, 76<sup>th</sup> Scientific Sessions of the American Diabetes Association, New Orleans, LA.

### **Bibliography**

#### *Peer reviewed articles*

1. Arble, D. M., Schwartz, A., Polotsky, V., Sandoval, D.A., Seeley, R.J. (2019) Vertical sleeve gastrectomy improves ventilatory drive through a leptin-dependent mechanism. [JCI Insights](#).
2. **Arble**, D.M. Ever, S.S., Bozadjieva, N., Frikke Schmidt, N., Myronovych, A., Lewis, A., Toure, M.H., Seeley, R.J. (2018) Metabolic comparison of Mini Gastric Bypass, Single-Anastomosis Duodenal-Switch, Roux-en-Y Gastric Bypass, and Vertical Sleeve Gastrectomy in rat. [Surgery for Obesity and Related Diseases](#). PubMedID# 30292648
3. Kim, T., Loyd, C., Holleman, C., **Arble**, D.M., Ottaway, N., Chabenne, J., Sandoval, D., Drucker, D.J., DiMarchi, R., Perez-Tilve, D., Habegger, K.M. (2018) Hepatic Glucagon-receptor Signaling Enhances Insulin-Stimulated Glucose Disposal in Rodents. [Diabetes](#). PubMedID# 30150304

4. Framnes, S.N. and **Arble**, D.M. (2018) The bidirectional relationship between obstructive sleep apnea and metabolic disease. Frontiers in Endocrinology. PubMedID# 30127766
5. Flak, J.N., **Arble**, D., Pan, W., Patterson, C., Lanigan, T., Goforth, P.B., Sacksner, J., Joosten, M., Morgan, D., Allison, M.B., Hayes, J., Feldman, E., Seeley, R.J., Olson, D.P., Rahmouni, K., Myers Jr., M.G. (2017) A leptin-regulated neuronal circuit controls glucose mobilization during noxious stimuli. J Clin Invest. PubMedID# 28714862
6. Sisley, R.S., **Arble**, D.M., Chambers, A.P., Gutierrez-Aguilar, R., He, Y., Xu, Y., Gardner, D., Moore, D.D., Seeley, R.J., Sandoval, D. (2016) Hypothalamic vitamin D improves glucose homeostasis and reduces weight. Diabetes. PubMedID# 27217488
7. **Arble**, D. M., Pressler, J.W., Sorrell, J., Wevrick, R., and Sandoval, D.A. (2016) Sleeve gastrectomy leads to weight loss in Magel2 knockout mouse. Surgery for Obesity and Related Diseases. PubMedID# 27396546
8. **Arble**, D. M., Sandoval, D.A., Turek, F.W., Woods, S.C, and Seeley, R.J. (2015) Metabolic effects of bariatric surgery in mouse models of circadian disruption. Int J Obes (Lond). PubMedID# 25869599
9. **Arble**, D. M., Holland, J., Raver, C., Sorrell, J., Pressler, J.W., Woods, S.C, Seeley, R.J., Sandoval, D.A., and Perez-Tilve, D. (2015) The melanocortin-4 receptor integrates circadian light cues and metabolism. Endocrinology. PubMedID#25730108
10. **Arble**, D. M., Sandoval, D.A., and Seeley, R.J. (2014) Mechanisms underlying weight loss and metabolic improvements in rodent models of bariatric surgery. Diabetologia. PubMedID# 25374275
11. **Arble**, D. M. and Sandoval D.A. (2013) CNS control of glucose metabolism: response to environmental challenges. Front Neurosci. PubMedID# 23550218
12. **Arble**, D. M., Vitaterna, M. H. and Turek, F. W. (2011) Rhythmic leptin is required for feeding time dependent weight gain in the mouse. PLoS One 6(9),e25079. PubMedID# 21949859
13. **Arble**, D. M., Bass, J., Laposky, A. D., Vitaterna, M. H. and Turek, F. W. (2009) Circadian timing of food intake contributes to weight gain. Obesity (Silver Spring) 17(11), 2100-2102. PubMedID#19730426
14. Preuss, F., Tang, Y., Laposky, A. D., **Arble**, D., Keshavarzian, A. and Turek, F. W. (2008) Adverse effects of chronic circadian desynchronization in animals in a "challenging" environment. Am J Physiol Regul Integr Comp Physiol 295(6), R2034-2040. PubMedID#18843092
15. Davidson, A. J., Yamazaki, S., **Arble**, D. M., Menaker, M. and Block, G. D. (2008) Resetting of central and peripheral circadian oscillators in aged rats. Neurobiol Aging 29(3), 471-477. PubMedID#17129640

#### *Invited Publications*

16. **Arble**, D.M., Bass, J., Diniz Behn, C., Butler, M.P., Challet, E., Czeisler, C., Depner, C.M., Elmquist, J., Franken, P., Grandner, M.G., Keene, A.C., Joyner, M.J., Karatsoreos, I., Kern, P.A.,

Klein, S., Morris, C.J., Pack, A.I., Satchidananda, P., Ptacek, L., Punjabi, N.M., Sassone-Corsi, P., Scheer, F.A., Sequest, E.R., Saxena, R., Thimman, M.S., Van Cauter, E., and Wright, K.P. (2015) Impact of sleep and circadian disruption on energy balance and diabetes workshop. *Sleep*. PubMedID# 26564131

17. **Arble**, D. M., Ramsey, K. M., Bass, J. and Turek, F. W. 2010. Circadian disruption and metabolic disease: Findings from animal models. *Best Pract Res Clin Endocrinol Metab* 24(5), 785-800. PubMedID#21112026 IF: 7.3

### *Book Chapters*

18. **Arble**, D. M., Copinschi, G., Vitaterna, M.H., Van Cauter, E., and Turek, F. W. 2012. Handbook of Neuroendocrinology: Chapter 12, Circadian Rhythms in Neuroendocrine Systems. Editors Fink, G., Levine, J., and Pfaff, D.W.

### *Other Media*

1. "The Hungry Brain: Outsmarting the Instincts That Make Us Overeat." Stephan J. Guyenet. February 2017.
2. Highlighted as Northwestern University student researcher, Reporter Sheila O'Sullivan, May 11, 2011. <http://www.feinberg.northwestern.edu/research/profiles/2011/d-arble>
3. Developed case study for USA TODAY, with reporter Nancy Gromen. February 25th, 2010. <http://www.usatodayeducate.com/staging/index.php/case-study-the-truth-about-sleep>
4. Chicago Sun-Times, Reporter Monifa Thomas. September 2nd, 2009
5. The Telegraph (UK), Reporter Kate Devlin. September 2nd, 2009, <http://www.telegraph.co.uk/health/healthnews/6131413/Its-not-just-what-you-eat-its-when-you-eat-it.html>
6. Daily Spiegel (Germany), Reporter Hartmut Wewetzer. September 3rd, 2009
7. Publico (Portugal), Reporter Ana Gerschenfeld. September 3rd, 2009, [http://www.publico.pt/Ci%C3%A2ncias/investigacao-vem-sustentar-velha-conviccao-comer-fora-de-horas-faz-mesmo-engordar\\_1399043](http://www.publico.pt/Ci%C3%A2ncias/investigacao-vem-sustentar-velha-conviccao-comer-fora-de-horas-faz-mesmo-engordar_1399043)
8. Australian Broadcasting Corporation Radio (Australia), Reporter Bromwyen Herbert. Aired September 3rd, 2009 (Transcript at <http://www.abc.net.au/am/content/2009/s2675104.htm>)
9. Le Figaro (France), Reporter Sandrine Cabut. September 4th, 2009, [http://recherche.lefigaro.fr/recherche/access/lefigaro\\_fr.php?archive=BszTm8dCk78atGCYonbyzsS7I9jdd4idDUVRtjJuGjdClvtpoRwuP1IY%2BvOyGV6iu2IGtjAq08M%3D](http://recherche.lefigaro.fr/recherche/access/lefigaro_fr.php?archive=BszTm8dCk78atGCYonbyzsS7I9jdd4idDUVRtjJuGjdClvtpoRwuP1IY%2BvOyGV6iu2IGtjAq08M%3D)
10. BBC News Online (UK), Reporter Sudeep Chand. September 4th, 2009, <http://news.bbc.co.uk/2/hi/health/8234386.stm>

11. "Quirks and Quarks," CBC News-Network Radio (Canada), Reporter Mark Crawley. Aired September 11th, 2009. (<http://www.cbc.ca/health/fitness-blog/2009/09/late-night-calories-could-pack-bigger-punch-for-your-paunch.html>)
12. Interviewed by National Institutes of Health, Reporter Vicki Contie. September 23rd, 2009

### *Abstracts*

1. Framnes-DeBoer, S.N., Jones, A.A, **Arble**, D.M. 2019. Impaired leptin signaling or obesity induces adverse cardiometabolic outcomes. *Pending*. Society for Neuroscience, Chicago, IL.
2. Jones, A.A., Chappelle, N., **Arble**, D.M. 2019. Photoperiod affects leptin sensitivity and ventilatory drive in the C57Bl/6J mouse. *Pending*. Society for Neuroscience, Chicago, IL.
3. Jones, A.A., **Arble**, D.M. 2019. Photoperiod modulates ventilatory drive through a leptin-melanocortin pathway in the C57Bl/6J mouse. *Pending*. Chronobiology Gordon Research Conference, Castelldefels, Spain.
4. Proppom, K., Framnes-DeBoer, S.N., **Arble**, D.M. 2019. The effect of intermittent hypoxia on body weight and food intake homeostasis in leptin compromised mice. Poster presentation. Marquette University, Milwaukee, WI.
5. Peterson, H., Framnes-DeBoer, S.N., **Arble**, D.M. 2019. The effects of acute vs chronic intermittent hypoxia on norepinephrine levels in mice. Poster presentation. Marquette University, Milwaukee, WI.
6. Chappelle, N., Jones, A.A, **Arble**, D.M. 2019. Diet induced mice photoperiod experiment. Poster presentation. Marquette University, Milwaukee, WI
7. Bakke, E., Framnes-DeBoer, S.N., **Arble**, D.M. 2019. Examining the Therapeutic Effects of Bromocriptine on Hyperglycemia in Lean and Obese Mice. Oral presentation. Marquette University, Milwaukee, WI.
8. Framnes-DeBoer, S.N., **Arble**, D.M. 2019. Intermittent hypoxia, sleep fragmentation and glucose tolerance. Poster presentation. Experimental Biology, Orlando, FL.
9. Framnes, S.N., Bakke, E., **Arble**, D.M. 2018. The effect of bromocriptine, a D2 agonist, in lean and obese mice. Poster presentation. Society for Neuroscience, San Diego, CA.
10. Bakke, E., Framnes, S.N., **Arble**, D.M. 2018. Examining the Therapeutic Effects of Bromocriptine on Hyperglycemia in Lean and Obese Mouse Models. Poster presentation. Marquette University, Milwaukee, WI.
11. **Arble**, D.M., Flak, J., Myers Jr., M., Sandoval, D.A., Seeley, R.J. 2017. A mouse model of sleep apnea reveals a key role for leptin in the pathogenesis of disordered breathing. Poster presentation. Associated Professional Sleep Societies, Boston, MA.
12. **Arble**, D.M., Lewis, A., Myronovych, A., Toure, M.H., Seeley, R.J. 2016. Rat models of mini gastric bypass and single-anastomosis duodenal-switch lead to metabolic improvements similar

to roux-en-y gastric bypass and vertical sleeve gastrectomy. Poster presentation. American Society for Metabolic and Bariatric Surgery, New Orleans, LA.

13. Flak, J., **Arble**, D. M., Patterson, C., Sacksner, J., Joosten, M., Olson, D., Rahmouni, K., Seeley, R.J., Myers, M. 2016. A leptin-responsive brainstem circuit that modulates sympathetic responses to noxious stimuli. Poster presentation. 76<sup>th</sup> Scientific Sessions of the American Diabetes Association, New Orleans, LA.
14. **Arble**, D. M., Flak, J., Myers, M., Polotsky, V., Schwartz, A., Sandoval, D.A., Seeley, R.J. 2016. Beyond body weight: How impaired leptin signaling can affect sleep disordered breathing. Poster presentation. Society for Research on Biological Rhythms, Palm Harbor, FL.
15. **Arble**, D. M., Barkholt, P., Yalamanshili, S., Cohen, R., Sandoval, D.A., Seeley, R.J. 2015. Bromocriptine improves glucose tolerance in mice regardless of dosage time or circadian organization. Poster presentation. Keystone Symposia, Diabetes: New Insights into Molecular Mechanisms and Therapeutic Strategies, Kyoto, Japan.
16. **Arble**, D. M., Pressler, J.W., Sorrell, J., Wevrick, R., Sandoval, D.A. 2015. Vertical sleeve gastrectomy leads to weight loss in a mouse model of Prader-Willi syndrome. Poster presentation. Keystone Symposia: Neural Control of Metabolic Physiology and Diseases, Snowbird, UT.
17. **Arble**, D. M., Sandoval, D.A., Woods, S.C, and Seeley, R.J. 2014. Metabolic effects of bariatric surgery in mouse models of circadian disruption. Poster presentation. Society for the Study of Ingestive Behavior, Seattle, WA.
18. **Arble**, D. M., Holland, J., Raver, C., Sorrell, J., Pressler, J.W., Woods, S.C, Seeley, R.J., Sandoval, D.A., and Perez-Tilve, D. 2014. The melanocortin-4 receptor integrates environmental light cues and metabolism. Oral presentation. Society for Research on Biological Rhythms, Big Sky, MT.
19. **Arble**, D.M., Sandoval, D., Woods, S., and Seeley, R.J. 2013. Vertical Sleeve Gastrectomy improves the metabolic phenotype of Clock mutant mice. Poster presentation. Society for Neuroscience, San Diego, CA.
20. **Arble**, D.M., Sandoval, D., Woods, S., Seeley, R.J., and Perez-Tilve, D. 2013. Melanocortin-4 Receptor is involved in Glucose Homeostasis during Circadian Disruption. Poster presentation. Keystone Symposia Neuronal Control of Appetite, Metabolism and Weight, Banff, Canada.
21. **Arble**, D.M., Bass, J., Vitaterna, M.H., and Turek, F.W. 2010. Feeding During the Circadian Light Phase Leads to Weight Gain in Clock Mutant but not Leptin Deficient Ob/Ob Mice. Poster presentation, Obesity Society, San Diego, CA.
22. **Arble**, D.M., Bass, J., Vitaterna, M.H., and Turek, F.W. 2010. Desynchronized feeding leads to weight gain in C57BL/6J but not leptin deficient ob/ob mice. Poster presentation, Society for Research on Biological Rhythms, Destin, FL.
23. **Arble**, D.M., Bass, J., Vitaterna, M.H., and Turek, F.W. 2010. Feeding during the circadian light phase leads to weight gain in both C57BL/6J and Clock mutant mice. Poster presentation, The National Institute of Diabetes and Digestive and Kidney Diseases Workshop on Circadian Rhythms and Metabolic Disease, Bethesda, MD.



24. **Arble**, D.M., Bass, J., Vitaterna, M.H., and Turek, F.W. 2009. Feeding during the circadian light phase leads to exaggerated weight gain in young and adult C57BL/6J mice. Oral presentation, Society for Neuroscience, Chicago, IL.
25. **Arble**, D.M., Goldschmidt, C., Vitaterna, M.H., and Turek, F.W. 2009. Sleep during phase restricted feeding in C57BL/6 mice. Poster presentation, Associated Professional Sleep Societies, Seattle, WA.
26. **Arble**, D.M., Laposky, A.D., and Turek, F.W. 2008. Restricting food intake to the light phase results in weight gain in C57BL/6J mice. Oral presentation, Society for Research on Biological Rhythms, Destin, FL.
27. **Arble**, D.M., Augustine, M.R., Laposky, A.D., and Turek, F.W. 2007. Diurnal and circadian activity rhythms in ob/ob and db/db mice. Poster presentation, Society for Neuroscience, San Diego, CA.