

## Curriculum Vitae

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**Place of Birth:** Evanston, Illinois

### Education

1992	B.S.	Biology	Loyola University of Chicago, Chicago, IL
1992	B.A.	English Literature	Loyola University of Chicago
2003	Ph.D.	Neuroscience (Dr. J. Takahashi)	Northwestern University, Evanston, IL

### Postdoctoral Training

2003-2011	Postdoctoral Fellow	Sleep Medicine (Dr. C. Czeisler)	Harvard Medical School, Boston, MA
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### Appointments at Academic/Hospitals/Affiliated Institutions

2020-present	Associate Professor	Biobehavioral Health	The Pennsylvania State University
2020-2021	Associate Professor	College of Nursing	The Pennsylvania State University
2014-2020	Assistant Professor	Biobehavioral Health	The Pennsylvania State University
2014-2020	Assistant Professor	College of Nursing	The Pennsylvania State University
2020-	Associate Professor	Biobehavioral Health	The Pennsylvania State University
2020-	Associate Professor	College of Nursing	The Pennsylvania State University
2011-2014	Associate Neuroscientist	Sleep Medicine	Brigham & Women's Hospital, Boston, MA
2011-2014	Instructor	Sleep Medicine	Harvard Medical School, Boston, MA
2003-2011	Research Fellow	Sleep Medicine	Brigham & Women's Hospital, Boston, MA

## Committee Service

2023-2024	National Sleep Foundation's Consensus Panel: Screen Use and Sleep in Adults and Children	National Sleep Foundation
2023-2024	Prevention and Methodology Training (PAMT) Program pre-doc recruitment committee	Penn State, Prevention Research Center (PRC)
2023-2024	HHD Recruiting and Hiring Workgroup	Penn State, HHD College
2022-present	Global Building Network (GBN) Internal Advisory Board	Penn State, GBN
2022-2024	Associated Professional Sleep Societies (APSS) Program Committee	Sleep Research Society (SRS)/APSS
2022-present	BBH Promotions and Tenure Committee	Penn State, BBH Department
2021	HHD Recruiting and Hiring Workgroup	Penn State, HHD College
2020-2021	BBH Diversity, Equity and Inclusion Committee	Penn State, BBH Department
2018-2019	BBH Faculty Development Committee	Penn State, BBH Department
2016-2018	BBH Advisory Committee	Penn State, BBH Department
2015-2017	Wellness Clinic Task Force	Penn State, College of Nursing
2015-2017	College of Nursing DNP Committee	Penn State, College of Nursing
2015-2021	BBH Founder's Day Committee	Penn State, BBH Department
2015-2017, 2019-2021	Co-chair BBH Colloquium Series	Penn State, BBH Department
2014-2021	College of Nursing PhD Council	Penn State, College of Nursing
2014-2021	College of Nursing Graduate Affairs	Penn State, College of Nursing
2014-2015	College of Nursing Sleep Faculty Search Committee, Member	Penn State, College of Nursing
2014-2015	BBH Methodology Faculty Search Committee, Member	Penn State, BBH Department
2009-2012	Postdoctoral Leadership Council	BWH
2008-2014	Screening Committee, Member	BWH, Division of Sleep Medicine
2004-2014	Lighting Committee, Member	BWH, Division of Sleep Medicine

## Professional Societies

1999-present	Sleep Research Society
1998-2019	Society for Research of Biological Rhythms

## Editorial Activities

Editorial Board		Date of Service
Sleep Health		January 2016 - present
Associate Editor – Special Issue		Date of Service
Sleep Health		2022 - 2024
Ad hoc Reviewer	# Reviews	Year of Review
American Journal of Psychiatry	1	2017
Behavioral Sleep Medicine	1	2019
Biological Research for Nursing	1	2014
Chronobiology International	1	2018
Environmental International	1	2018

Journal of Adolescence	1	2012
Journal of Biological Rhythms	8	2006 (2), 2007, 2011, 2012, 2013, 2015, 2017
Journal of Clinical Sleep Medicine	2	2019, 2021
Journal of Research on Adolescence	1	2016
Journal of Sleep Research	1	2018
Nature Human Behavior	1	2021
NeuroImage	1	2014
New England Journal of Medicine	1	2020
Obesity	1	2011
Open Sleep Journal	1	2012
Pediatrics	2	2017, 2021
Physiological Genomics	1	2018
PLoS One	3	2015 (2), 2017
PNAS	1	2020
Scientific Reports	3	2018, 2021 (2)
Sleep	5	2006, 2016, 2018 (2), 2024
Sleep Health	16	2014, 2015, 2016, 2017 (2), 2019, 2020 (4), 2021 (2), 2022 (2), 2023 (1), 2024 (1)
Sleep Medicine	3	2020, 2022, 2024
Ubicomp 2015	1	2015

## Grant Reviews

### Intramural

Ad hoc Reviewer	# Reviews	Year of Review
Clinical and Translational Sciences Institute (CTSI)	2	2015, 2016
Social Science Research Institute (SSRI)	4	2014, 2015, 2016, 2017
College of Nursing Mock Grant Reviews	4	2015, 2016, 2020, 2021

### Extramural

2021-present	NIH/NINDS Neurological Sciences Training (NST-1)	Charter member
2018	NIH/NHLBI K01 Diversity Section	Ad hoc reviewer
2017	NIH/NINDS F99/K00 Study Section	Ad hoc reviewer
2017-2021	NIH/NINDS Neurological Sciences Training (NST-1)	Member
2016	NIH/NINDS Neurological Sciences Training (NST-1)	Ad hoc reviewer

## Report of Funded Projects

### Funding Information

#### Past

2004-2006	Genetic Analysis of Extreme Circadian/Sleep Phenotypes (Chang)
	Individual National Research Service Award (NRSA), NIH/NHLBI F32 HL078360
	PI
	This fellowship provided the salary and training support to conduct the genetic analysis of individuals exhibiting extreme circadian rhythm and/or sleep phenotypes.
2010-2012	Impact of <i>MTNR1B</i> and <i>CRY2</i> Variants on Sleep, Circadian Physiology and Metabolism

	Investigator initiated grant, NIH/NIDDK R21 DK089378
	Co-I (Scheer and Saxena Co-PIs)
	The goal was to determine the impact of genetic variants of <i>MTNR1B</i> and <i>CRY2</i> on circadian, metabolic and sleep variables and to help explain the increased risk for the development of diabetes in carriers of the risk SNP. I led the data collection and phenotypic analysis of in-patient laboratory studies.
2012-2014	Influence of Circadian Genes on Sleep, Obesity, and Metabolic Phenotypes
	Brigham and Women's Hospital/Harvard Eleanor and Miles Shore Fellowship for Scholars in Medicine Faculty Career Development Award
	PI
	The aim of this proposal was to obtain salary support for protected time to complete data analysis, writing manuscripts, and preparing grant proposals to fund future studies of social-cultural, behavioral, genetic, and environmental context and influences on sleep in children, adolescents, and adults.
2012-2016	Effect of Circadian Gene Variants on Sleep, Obesity, and Metabolic Phenotypes
	Mentored career development grant, NIH/NHLBI K01 HL115458
	PI
	The aim of the proposed research was to examine the influence of circadian genes on sleep behavior, obesity and cardio-metabolic outcome measures across the lifespan. This was determined by investigating associations of candidate circadian gene variants and potential gene-gene interactions with sleep, obesity and metabolic phenotypes in multiple large cohorts. The goal of the overall project was to obtain the necessary mentored training in genetic statistical analysis and advanced epidemiological biostatistics to address the aims of the research study and to develop into an independent investigator in sleep research.
2015-2017	Complex Interactions of Behavior, Genes, and Environment in the Multi-system Characterization of the Effects of Sleep Loss on Health, Cardio-metabolic Disease Risk, Cognition, and the Epigenome
	Penn State Clinical and Translational Science Institute (CTSI) Innovative Approaches to Big Data Pilot Project
	PI
	The goal of this project was to pilot a comprehensive characterization of the cardio-metabolic, cognitive, genomic, and epigenetic effects of sleep insufficiency in a controlled laboratory setting. "Big Data" methodologies are employed to handle the complexities of mixed methods, a variety of sampled tissues and cognitive testing, varied timescales, and comprehensive whole genome analyses. The transdisciplinary approach leverages expertise from multiple disciplines, departments, and colleges at Penn State's University Park campus, collaborating to investigate how sleep loss contributes to impairments of various biological systems and ultimately leads to increased risk of disease.
2015-2016	Measuring the Effects of Sleep Restriction on the Gut Microbiome in Adults
	College of Health and Human Development/Huck Institute of the Life Sciences, Penn State
	PI
	This study aimed to investigate the effects of sleep restriction on gut microbiota composition and metabolomics profile in humans. We tested the hypotheses that short sleep (5 nights at <5 hours/night) alters the microbiome and that sleep recovery (2 nights at ~10 hours/night) restores (at least partially) the gut microbiota.
2018	Can more sleep lead to improved metabolism in college students?
	Biobehavioral Health Department Seed Fund, Penn State

	PI
	The overall goal of this pilot project was to examine the effects and potential positive impact of a 1-week sleep extension of 1 hour/night behavioral intervention on metabolism in college students.
2013-2019	Biopsychosocial Determinants of Sleep and Wellbeing For Teens in Fragile Families
	NIH/NICHD R01 HD073352
	Co-Investigator (Hale PI)
	This study investigated the biopsychosocial and genetic determinants of adolescent sleep, and the extent to which differential sleep patterns and behaviors during childhood contribute to differences in obesity and cardiometabolic risk using the Fragile Families Study (FFS).
2019-2020	Sleep extension and neurobehavioral measures in college students
	Biobehavioral Health Department Seed Fund, Penn State
	PI
	The purpose of this study was to examine the potential effects of a 1-week sleep extension of 1 hour/night behavioral intervention on neurocognitive performance and mood.
2019-2021	Building energy savings by tuning lighting spectral power distribution
	IEE Seed Grant, Penn State
	Co-Investigator (Wang PI)
	The goal of this study was to examine effects of light on thermo-physiological responses and develop a visually-integrated thermal comfort (ViTCo) system for tuning indoor lighting.

**Current**

- 2019-2025 Longitudinal behavioral, sociodemographic, and contextual predictors of young adult sleep health and well-being  
NIH/NICHD R01 HD073352  
Subaward PI (PI: Lauren Hale, Stony Brook University)  
This study investigates the sociodemographic, contextual, and behavioral predictors of young adult sleep health and how sleep health predicts young adult health and well-being.
- 2020-2025 The role of brain arousal in resting-state functional MRI  
NIH/NINDS R01 NS113889  
Co-I (PI: Xiao Liu)  
The goal of this project is to develop a resting-state fMRI-based arousal measure and to elucidate the contributions of related factors to connectivity/dynamics measurement.
- 2022-2024 Use of Frequen-Zzz Sleep Pad to Increase Restorative Sleep: A Proof-of-Concept Study  
Kunasan, Ltd.  
PI  
This study aims to collect pilot data testing the potential effects of use of the Frequen-Zzz sleep pad on objective and self-reported measures of sleep. Additionally, the study aims to determine feasibility and effect sizes of this non-pharmacological intervention on sleep.
- 2021-2025 Can more sleep improve pain responses, symptomatology, and regulation in college students?  
Biobehavioral Health Department Seed Fund, Penn State  
PI  
The aim of this pilot study is to examine the effects of a sleep extension intervention on multiple pain-related outcomes in college students.
- 2022-2023 Developing tools to study urban lighting systems that support healthier circadian cycles

Institutes of Energy and the Environment (IEE) Seed Grant (2022), Penn State  
PI

The goal of this project is to support a new interdisciplinary team in the construction and testing of wearable sensors capable of measuring light in various indoor and outdoor environments as well as capturing multiple health and behavioral outcomes to create rich in-situ datasets.

2022-2023 Light Sleep: Evaluating the consequences of mistimed light-emitting device use on cardiac activity and sleep health

NASA Pennsylvania Space Grant Consortium (PSGC)

PI

The goals of this project are two-fold. The first goal aims to evaluate the effects of mistimed light-emitting phone use on cardiac activity and sleep. The second goal is to test the effectiveness of blue-light-blocking glasses as a countermeasure in attenuating the effects of mistimed phone use.

## **Report of Local Teaching and Training**

### **Teaching of Students in Courses**

2004	Circadian Biology: Cellular Oscillations to Sleep Regulation Harvard undergraduate and graduate students	Harvard University MCB 186, FAS Discussion section 1 hr/week for 10 wks 3 hr lecture per wk for 10 weeks
2004-2005	The 24-hour Clock: Genetic Regulation of Human Circadian Rhythms and Sleep Undergraduate faculty	Harvard University, Chautauqua Course 1-hour lecture
2013	Sleep, Health and Success: Circadian and Sleep Physiology Harvard undergraduate students	Harvard University SLS-17, FAS 1-hour lecture
2013	Sleep, Health and Success: The Role of Genetics in Circadian Regulation of Sleep Harvard undergraduate students	Harvard University SLS-17, FAS 1-hour lecture
2014 Fa	Sleep, Genes, and Environment Biobehavioral Health graduate students	Pennsylvania State University BBH 502 3-hour lecture
2014 Fa	Sleep and Health Penn State undergraduate students	Pennsylvania State University BBH 311 1.3-hour lecture
2015 Sp	Principles of Epidemiology Penn State 43 undergraduate students	Penn State University BBH/HPA 440 1.3-hour lecture twice/week for 15 weeks
2015 Sp	Sleep Health and Genetics Penn State undergraduate students	Pennsylvania State University BBH 410 1-hour lecture
2015 Sp	Sleep and Health Penn State undergraduate students	Pennsylvania State University BBH 311 1.3-hour lecture
2015 Fa	Sleep, Genes, and Environment Penn State BBH graduate students	Pennsylvania State University BBH 502 3-hour lecture
2015 Fa	Sleep and Health Penn State undergraduate students	Pennsylvania State University BBH 311 1.3-hour lecture
2016 Sp	Genetics and Genomics Workshop CON graduate students (PhD/DNP)	Penn State College of Nursing UP/Hershey Spring Intensive – 5-hour lecture
2016 Sp	Principles of Epidemiology	Penn State University BBH/HPA 440

2016 Sp	Penn State 80 undergraduate students Sleep and Stress	1.3-hour lecture twice/week for 15 weeks Pennsylvania State University BBH 432
2016 Sp	Penn State undergraduate students Sleep Health and Genetics	1-hour lecture Pennsylvania State University BBH 410
2016 Fa	Penn State undergraduate students Principles of Epidemiology	1-hour lecture Penn State University BBH/HPA 440
2016 Fa	Penn State 180 undergraduate students Sleep, Genes, and Environment: The Role of Light and Circadian Gene Variants	1.3-hour lecture twice/week for 15 weeks Pennsylvania State University BBH 502
2016 Fa	Penn State BBH graduate students Sleep and Health: Using a Big Data Approach	3-hour lecture Pennsylvania State University NURS 502
2017 Sp	Penn State CON graduate students Genetics and Genomics Workshop	Penn State College of Nursing UP/Hershey Spring Intensive – 5-hour lecture
2017 Sp	CON graduate students (PhD/DNP) Principles of Epidemiology	Penn State University BBH/HPA 440
2017 Sp	Penn State 180 undergraduate students Biobehavioral Aspects of Sleep	1.3-hour lecture twice/week for 15 weeks Penn State University BBH 497
2017 Sp	Penn State 35 undergraduate students The Genetics of Sleep	1.3-hour lecture twice/week for 15 weeks Pennsylvania State University BBH 410
2017 Fa	Penn State undergraduate students Principles of Epidemiology	1-hour lecture Penn State University BBH/HPA 440
2017 Fa	Penn State 180 undergraduate students Sleep and Health	1.3-hour lecture twice/week for 15 weeks Penn State University NURS FYS
2017 Fa	Penn State undergraduate students Sleep and Health	2-hour lecture Penn State University BBH 101
2018 Sp	Penn State undergraduate students Emerging Topics in Genomic and Epigenetic Research	1-hour lecture Penn State University NURS 590
2018 Sp	Penn State 6 graduate students Systems Neuroscience	3-hour lecture once/week for 5 weeks Penn State University NEURO 521
2018 Sp	Penn State 8 graduate students The Genetics of Sleep	1.3-hour lecture twice/week for 1 week Pennsylvania State University BBH 410
2018 Fa	Penn State undergraduate students Principles of Epidemiology	1-hour lecture Penn State University BBH/HPA 440
2018 Fa	Penn State 130 undergraduate students Sleep and Health	1.3-hour lecture twice/week for 15 weeks Penn State University NURS FYS
2018 Fa	Penn State undergraduate students Sleep and Health	1-hour lecture Penn State University BBH 325
2019 Sp	Penn State undergraduate students Emerging Topics in Sleep Health	1.3-hour lecture Penn State University NURS 590
2019 Sp	Penn State 3 graduate students Elevator Pitch and Presentations	3-hour lecture once/week for 5 weeks Penn State University BBH 597
2019 Sp	Penn State graduate students Genetics and Genomics of Sleep	1.3-hour lecture Pennsylvania State University BBH
2019 Sp	Penn State undergraduate students Gene Expression and Epigenetics of Sleep	497.006 1.3-hour lecture Pennsylvania State University BBH
	Penn State undergraduate students	497.006 1.3-hour lecture

2019 Sp	The Genetics of Sleep Penn State undergraduate students	Pennsylvania State University BBH 410 1-hour lecture
2019 Fa	Principles of Epidemiology Penn State 70 undergraduate students	Penn State University BBH/HPA 440 1-hour lecture 3 times/week for 15 weeks
2019 Fa	Research Methods in BBH Penn State 50 undergraduate students	Penn State University BBH 310 1-hour lecture 3 times/week for 15 weeks
2019 Fa	Sleep and Health Penn State undergraduate students	Penn State University NURS FYS 1-hour lecture
2019 Fa	Sleep and Health Penn State undergraduate students	Penn State University BBH 325 1.3-hour lecture
2020 Sp	Principles of Epidemiology Penn State 74 undergraduate students	Penn State University BBH/HPA 440 1-hour lecture 3 times/week for 15 weeks
2020 Sp	Emerging Topics in Genomic and Epigenomic Research Penn State 3 graduate students	Penn State University NURS 590 3-hour lecture once/week for 5 weeks
2020 Sp	Elevator Pitch and Presentations Penn State graduate students	Penn State University BBH 597 1.3-hour lecture
2020 Fa	Biobehavioral Aspects of Sleep Penn State 12 undergraduate students	Penn State University BBH 497 1.3-hour lecture twice/week for 15 weeks
2020 Fa	Sleep and Human Health Laboratory Penn State undergraduate students	Penn State University NUTR FYS Two 30-min lectures
2021 Sp	Elevator Pitch and Presentations Penn State graduate students	Penn State University BBH 597 1.3-hour lecture
2022 Fa	Principles of Epidemiology Penn State 34 undergraduate students	Penn State University BBH/HPA 440 1-hour lecture 3 times/week for 15 weeks
2022 Fa	Sleep Health and Sleep Myths Penn State 200 undergraduate students	Penn State University BBH 101 1-hour lecture
2022 Fa	Sleep and Health Penn State undergraduate students	Penn State University BBH 325 1.3-hour lecture
2023 Sp	The “rapid-research 90” or research pitch Penn State graduate students	Penn State University BBH 597 1.3-hour lecture
2023 Fa	Sleep extension: Designing intervention studies in college students Penn State 70 undergraduate students	Penn State University BBH 310 1-hour lecture
2024 Sp	Research Strategies for Studying BBH Penn State 84 undergraduate students	Penn State University BBH 310 1-hour lecture 3 times/week for 15 weeks
2024 Fa	Principles of Epidemiology Penn State 50 undergraduate students	Penn State University BBH/HPA 440 1-hour lecture 3 times/week for 15 weeks

**Formal Teaching of Residents, Clinical Fellows and Research Fellows (post-docs)**

2001	Genetics of Sleep and Circadian Rhythms Sleep Medicine Residents	Northwestern University, Chicago, IL One hour lecture
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**Local Invited Presentations**

2000	Genetic Analysis of Familial Advanced Sleep Phase Syndrome/Oral Presentation Northwestern University Institute for Neuroscience Retreat
2013	Scientists Competing Successfully Brigham & Women’s Hospital Office of Multicultural Careers Roundtable



- 2013 Influence of Circadian Genes on Sleep, Obesity, and Metabolic Phenotypes  
Brigham & Women’s Hospital New Faculty Welcome Lunch
- 2014 Dual Career Couples: How Do They Do It?  
Brigham & Women’s Hospital Center for Faculty Development and Diversity
- 2015 Shedding Light on Sleep  
Noll Physiological Research Seminar Series, Pennsylvania State University
- 2016 HHD College Biannual Alumni’s Society Board of Directors Meeting, Panel on Sleep

## **Report of Regional, National and International Invited Teaching and Presentations**

### **Invited Presentations and Courses**

#### Regional, National, and International Invited Presentations and Courses

##### **Regional**

- 2000 Seminar  
Loyola University Women in Science
- 2015 “Shedding Light on Sleep”  
Noll Physiological Research Seminar Series
- 2016 Millenium Café Seminar “Spotlight on Sleep and Health”  
Materials Research Institute, Pennsylvania State University
- 2016 “Sleep and Health”  
Penn State College of Nursing Alumni Weekend
- 2016 “Sleep and Health”  
Healthy People Penn State Research Conference and Expo
- 2018 “Turnitin: Q & A”  
Penn State College of Nursing Graduate Seminar
- 2021 IMPACT Program Presentation, Penn State  
“My Road to Sleep Research”
- 2024 IMPACT Program Presentation, Penn State  
“My Road to Sleep Research”

##### **National**

- 2001 Genetic Analysis of a Familial Case of Advanced Sleep Phase Syndrome  
Brown University, Providence, RI
- 2002 Genetic Characterization of Familial Advanced Sleep Phase Syndrome  
Society for Research on Biological Rhythms, Amelia Island, FL (abstract)
- 2007 Sleep Timing and Circadian Rhythms in Extreme Phenotypes  
Scripps Clinical Sleep Center Rounds, La Jolla, CA
- 2008 Adaptation of the Human Circadian System by Prior Light  
Annual Meeting of the Associated Professional Sleep Societies, Baltimore, MD (abstract)
- 2009 The Effect of Diurnal Preference on Subjective Alertness and Performance During  
Extended Wakefulness  
Annual Meeting of the Associated Professional Sleep Societies, Seattle, WA (abstract)
- 2012 Impact of Light and Technology on Circadian Rhythms and Sleep  
Program to Increase Diversity in Behavioral Medicine and Sleep Disorders (PRIDE)  
SUNY Downstate Medical Center and New York University, New York, NY

- 2013 Sleep, Genes, and Environment  
Nature & Nurture: Genetic and Environmental Influences on Children’s Responses to Adversity, NICHD workshop Rockville, MD
- 2013 Sleep, Genes, and Environment  
Colloquium in the Living Center, Biobehavioral Health Department, Pennsylvania State University, University Park, PA
- 2013 The Influence of Circadian Genes and the Light Environment on Sleep  
Center for Research on Occupational and Environmental Toxicology, Oregon Health Sciences University, Portland, OR
- 2020 Career Development “K” Awards: A Reviewer’s Perspective  
Programs to Increase Diversity Among Individuals Engaged in Health Related Research (PRIDE) New York University, New York, NY (via zoom)
- 2021 Career Development “K” Awards: A Reviewer’s Perspective  
Programs to Increase Diversity Among Individuals Engaged in Health Related Research (PRIDE) New York University, New York, NY (via zoom)
- 2022 Tips for a Successful K Submission: A Reviewer’s Perspective  
Program to Increase Diversity in Behavioral Medicine and Sleep Disorder Research (PRIDE) University of Miami, Miami, FL
- 2022 Effects of Experimental Sleep Restriction and Sleep Extension Interventions on Cardiometabolic Health  
Columbia University Irving Medical Center (CUIMC) Sleep Center Seminar Series, New York, NY (remote).
- 2024 Technology and Digital Media (TDM) and Sleep Health. NIH Impact of Technology and Digital Media on Child and Adolescent Development and Mental Health, April 4-5, 2024
- 2024 Tips for a Successful K Submission: A Reviewer’s Perspective. June 24, 2024 Program to Increase Diversity in Behavioral Medicine and Sleep Disorder Research (PRIDE) University of Miami, Miami, FL

**International**

- 2013 Sleep, Genes and Environment: The Role of Circadian Gene Variants and Light  
Harvard Medical School Division of Sleep Medicine Sleep Grand Rounds, Boston, MA.
- 2015 The Role of Light in Sleep, Circadian Rhythms and Alertness. Office Ergonomics Research Committee Marconi Conference, Holland, MI.
- 2016 Light from Electronic Media and Sleep. Meet the Professor Presentation at the Annual SLEEP meeting, Denver, CO.
- 2017 Is there an app for that? Leveraging technology for adolescent sleep interventions, Conversation Roundtable at Society for Research in Child Development (SRCD) meeting, Austin, TX.
- 2017 Sleep in the Digital Media Age. Trainee Symposia Series Presentation at the Annual SLEEP meeting, Boston, MA.
- 2018 Is Electronic Media Making Us Wired and Tired? Trainee Symposia Series Presentation at the Annual SLEEP meeting, Baltimore, MD.
- 2024 Lessons Learned and Future Directions for the Future of Families Sleep Sub-study (FFSS). Rapid Fire Symposium at the Annual SLEEP meeting, Houston, TX.

**Report of Education of Patients and Service to the Community**

- 2010 Fayerweather Street School, Cambridge, MA  
Presentation to 7<sup>th</sup> and 8<sup>th</sup> grade students entitled “Sleep, Health and Success: How and why we sleep, when and if it’s up to us”
- 2012 Fayerweather Street School, Cambridge, MA  
Presentation to 7<sup>th</sup> and 8<sup>th</sup> grade students entitled “Sleep, Health and Success”
- 2013 Fayerweather Street School, Cambridge, MA  
Presentation to 7<sup>th</sup> and 8<sup>th</sup> grade students entitled “Sleep, Health and Success”
- 2014 Fayerweather Street School, Cambridge, MA  
Presentation to parents entitled “Sleep, Health and Success: Perspectives for Our Children and Ourselves”
- 2015 Presentation to 4 9<sup>th</sup> grade student Health Education classes entitled “Sleep and Health”  
State College High School, State College, PA

## **Report of Scholarship**

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Complete bibliography at NCBI:

<http://www.ncbi.nlm.nih.gov/sites/myncbi/anne-marie.chang.1/bibliography/48258087/public>

### **Peer reviewed publications in print or other media**

† denotes equal contribution; \* denotes graduate or undergraduate trainee

1. Vitaterna MH, King DP, **Chang A-M**, Kornhauser JM, Lowrey PL, McDonald JD, Dove WF, Pinto LH, Turek FW, Takahashi JS. Mutagenesis and mapping of a mouse gene, *Clock*, essential for circadian behavior. *Science* 1994;264(5159):719-25. [PMID: 8171325]
2. King DP, Vitaterna MH, **Chang A-M**, Dove WF, Pinto LH, Turek FW, Takahashi JS. The mouse *Clock* mutation behaves as an antimorph and maps within the W19H deletion, distal of *Kit*. *Genetics* 1997;146(3):1049-60. [PMID: 9215907] PMCID: PMC1208034
3. Antoch MP, Song EJ, **Chang A-M**, Vitaterna MH, Zhao Y, Wilsbacher LD, Sangoram AM, King DP, Pinto LH, Takahashi JS. Functional identification of the mouse circadian *Clock* gene by transgenic BAC rescue. *Cell* 1997;89(4):655-67. [PMID: 9160756]
4. Valentinuzzi VS, Buxton OM, **Chang A-M**, Scarbrough K, Ferrari EA, Takahashi JS, Turek FW. Locomotor response to an open field during C57BL/6J active and inactive phases: differences dependent on conditions of illumination. *Physiology & Behavior* 2000;69(3):269-75. [PMID: 10869592]
5. Reid KJ, **Chang A-M**, Dubocovich ML, Turek FW, Takahashi JS, Zee PC. Familial Advanced Sleep Phase Syndrome. *Archives of Neurology* 2001;58(7):1089-94. [PMID: 11448298]
6. Vitaterna MH, Ko CH, **Chang A-M**, Buhr ED, Fruechte EM, Schook A, Antoch MP, Turek FW, Takahashi JS. The mouse *Clock* mutation reduces circadian pacemaker amplitude and enhances efficacy of resetting stimuli and phase response curve amplitude. *Proceedings of the National Academy of Sciences USA* 2006;103(24):9327-32. [PMID: 16754844] PMCID: PMC1474012
7. Lee JH, Wang W, Silva EJ, **Chang A-M**, Scheuermaier KD, Cain SW, Duffy JF. Neurobehavioral performance in young adults living on a 28-h day for 6 weeks. *Sleep* 2009;32(7):905-913. [PMCID: PMC2706904]
8. **Chang A-M**, Reid KJ, Gourineni R, Zee PC. Sleep timing and circadian phase in delayed sleep phase syndrome. *Journal of Biological Rhythms* 2009;24(4):313-321. [PMID: 19625733] PMCID: PMC3689431

9. **Chang A-M**, Scheer FAJL, Czeisler CA. The human circadian system adapts to prior photic history. *Journal of Physiology* 2011;589(5):1095-1102. *Selected for Best of Sleep Medicine 2012*. [PMCID: PMC3060589]
10. **Chang A-M**, Buch AM, Bradstreet DS, Klements DJ, Duffy JF. Human diurnal preference and circadian rhythmicity are not associated with the *CLOCK* 3111C/T gene polymorphism. *Journal of Biological Rhythms* 2011;26(3):276-279. [PMID: 21628555] PMC3689429
11. Cain SW, Silva EJ, **Chang A-M**, Ronda JM, Duffy JF. One night of sleep deprivation affects reaction time, but not interference of facilitation in a stroop task. *Brain and Cognition* 2011;76:37-42. [PMID: 21477910] PMCID: PMC3310176
12. Duffy JF, Cain SW, **Chang A-M**, Phillips AJK, Munch MY, Gronfier C, Wyatt JK, Dijk D-J, Wright KP, Czeisler CA. Sex difference in intrinsic circadian period in humans. *Proc Natl Acad Sci USA* 2011;108:15602-8. [PMID: 21536890] PMCID: PMC3176605
13. **Chang A-M**, Santhi N, St. Hilaire MA, Gronfier C, Bradstreet DS, Duffy JF, Lockley S, Kronauer RE, Czeisler CA. Human responses to bright light of different durations. *Journal of Physiology* 2012;590(13):3103-12. [PMID: 22526883] PMCID: PMC3406393
14. Lim ASP, **Chang A-M**, Shulman JM, Raj T, Chibnik LB, Myers AJ, Buchman AS, Bennett DA, Cain SW, Czeisler CA, Duffy JF, Saper CB, De Jager PL. A common polymorphism near *PER1* and the timing of human behavioral rhythms. *Annals of Neurology* 2012;72:324-334. [PMID: 23034908] PMCID: PMC3464954
15. **Chang A-M**, Scheer FAJL, Czeisler CA, Aeschbach D. Direct effects of light on alertness, vigilance, and the waking electroencephalogram in humans depend on prior light history. *SLEEP* 2013;36(8):1239-46. [PMID: 23904684] PMCID: PMC3700721
16. Anderson C, **Chang A-M**, Sullivan JP, Ronda JM, Czeisler CA. Assessment of drowsiness based on ocular parameters detected by infrared reflectance oculography. *Journal of Clinical Sleep Medicine* 2013;9(9):907-20. [PMID: 23997703] PMCID: PMC3746718
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63. Krishnan AS\*, Reichenberger DA\*, Strayer SM, Master L, Russell MA, Buxton OM, Hale L, **Chang A.-M**. Childhood sleep is prospectively associated with adolescent alcohol and marijuana use. *Ann Epidemiol.* 2024 Oct;98:25-31. [PMID: 39043321] PMCID: PMC11387129.

† denotes equal contribution; \* denotes graduate or undergraduate trainee

## **Non-peer reviewed scientific or medical publications/materials in print or other media**

1. Reid KJ, **Chang A-M**, Zee PC. Circadian rhythm sleep disorders. In: Lee-Chiong TL Jr, guest editor. Medical Clinics of North America: Sleep Disorders. Philadelphia: Saunders; 2004.
2. **Chang A-M**, Zee PC. Human circadian rhythms: genetics of circadian disorders in humans. In: Scuire LR, editor. New Encyclopedia of Neuroscience. Philadelphia: Elsevier; 2008.
3. **Chang A-M**, Zee PC. Genetics of circadian rhythm disorders. In: Pack, AI, guest editor. Sleep Medicine Clinics. Philadelphia: Elsevier Saunders; 2011.
4. Snyder CK\* and **Chang A-M**. Mobile technology, sleep, and circadian disruption. In: Grandner M, editor. Sleep and Health. Academic Press, 2019, Pages 159-170. ISBN 9780128153734
5. Reid KJ, **Chang A-M**, Zee PC, Buxton OM. Circadian Rhythms Regulation. In: Kryger MH, Avidan AY, Goldstein C. Atlas of Clinical Sleep Medicine 3<sup>rd</sup> ed. St. Louis, Missouri: Elsevier: 2024.
6. **Chang A-M**, Kaki PC, Yuan RK, Depner CM, Buxton OM. Sleep and Circadian Rhythms and Metabolism. In The Oxford Handbook of Sleep and Sleep Disorders, 2<sup>nd</sup> ed. Oxford University Press. *In Press*.

## **Manuscripts under review**

1. Mathew GM, Reichenberger DA, Shandra CL, Master L, Dadzie A, Buxton OM, **Chang A-M**, Hale L. Sociodemographic differences in young adult actigraphic sleep in a diverse, national sample: The Future of Families Study. *Under review*
2. Wilkes JR, Walter AE, Shetty S, Niu X, **Chang A-M**, Miller SJ, Sebastianelli WJ, Seidenberg PH, Slobounov SM. The intersection of sleep and subacute head trauma in Division I collegiate football players: A brief report. *Under review*.

## **Thesis**

**Chang A-M**. Phenotypic characterization and genetic analysis of human circadian rhythm sleep disorders [dissertation]. Evanston (IL): Northwestern University, 2003.

## **Abstracts, Poster Presentations and Exhibits Presented at Professional Meetings**

**Chang A-M**, Scheer FAJL, Czeisler CA. Adaptation of the human circadian system by prior light history. A0138. Oral presentation at the SLEEP meeting, Baltimore, June 2008.

**Chang A-M**, Stephens J, Ukaegbu V, Silva EJ, Duffy JF. The effect of diurnal preference on subjective alertness during extended wakefulness. Poster presentation at the Fatigue Management in Transportation Operations International Conference, Boston, March 2009.

**Chang A-M**, Stephens J, Ukaegbu V, Silva EJ, Duffy JF. Vigilance response of human diurnal types to acute sleep deprivation. Poster presentation at BWH BRI Research Accelerator Program, Boston, May 2009.

**Chang A-M**, Stephens J, Ukaegbu V, Silva EJ, Duffy JF. The effect of diurnal preference on subjective alertness and performance during extended wakefulness. A0133. Oral presentation at the SLEEP meeting, Seattle, June 2009.

Kearney DW, **Chang A-M**, Dennison CF, Ricker JC, Silva EJ, Duffy JF. Comparison of circadian phase and mid-sleep times in morning and evening types. A0170. SLEEP meeting, Seattle, June 2009.

Veron O, **Chang A-M**, Ronda JM, Kho J, Duffy JF. Sleep architecture in morning and evening types at baseline and following sleep deprivation. A0147. SLEEP meeting, Seattle, June 2009.



Lee JH, Wang W, Silva EJ, **Chang A-M**, Scheuermaier KD, Cain SW, Duffy JF. Neurobehavioral performance in young adults living on a 28-h day for six weeks. A0141. SLEEP meeting, Seattle, June 2009.

Czeisler CA, Anderson C, **Chang A-M**, Cain SW, Ronda JM, Duffy JF. Evaluation of photic countermeasures for circadian entrainment of neurobehavioral performance and sleep-wake regulation before and during spaceflight. NASA Human Research Program Investigator's Workshop, Houston, February 2010.

**Chang A-M**, Scheer FAJL, Czeisler CA, Aeschbach, D. The magnitude of acute alerting effect of light depends on prior light history. A0078 Poster presentation at the SLEEP meeting, San Antonio, June 2010.

Anderson C, **Chang A-M**, Ronda JM, Czeisler CA. Real-time drowsiness as determined by infra-red reflectance oculography is commensurate with gold standard laboratory measures: A validation study. A0309. SLEEP meeting, San Antonio, June 2010.

Buch AM, **Chang A-M**, Klements DJ, Duffy JF. Human diurnal preference not associated with *Clock* 3111T/C gene polymorphism. A0208. SLEEP meeting, San Antonio, June 2010.

**Chang A-M**, Santhi N, Bradstreet DS, Lockley SW, Duffy JF, Kronauer RE, Czeisler CA. Duration response curve to bright light in humans. A0470. Oral presentation at the SLEEP meeting, Minneapolis, June 2011.

**Chang A-M**, Rondon LA, Taveras E, Buxton OM. Validation of a parental report of child sleep versus direct actigraphic assessment of sleep. A0779. Oral presentation at the SLEEP meeting, Minneapolis, June 2011.

Duffy JF, Cain SW, **Chang A-M**, Phillips AJ, Munch MY, Gronfier C, Wyatt JK, Wright KP, Czeisler CA. Sex difference in intrinsic circadian period in humans. A0897. SLEEP meeting, Minneapolis, June 2011.

Czeisler CA, **Chang A-M**, Anderson C, Cain SW, Ronda JM. Evaluation of photic countermeasures for circadian entrainment of neurobehavioral performance and sleep-wake regulation before and during spaceflight. NASA Human Research Program Investigator's Workshop, Houston, February 2012.

**Chang A-M**, Anderson C, Cain SW, Czeisler CA. Effect of different light regimens for circadian entrainment to an 8-hour advance of sleep. Oral presentation at the Society for Research of Biological Rhythms (SRBR) meeting, Sandestin FL, May 2012.

**Chang A-M**, Aeschbach D, Duffy JF, Czeisler CA. Impact of evening use of light-emitting electronic readers on circadian timing and sleep latency. A0606. Oral presentation at the SLEEP meeting, Boston, June 2012.

**Chang A-M**, Anderson C, Cain SW, Czeisler CA. Evaluation of photic countermeasures for circadian entrainment to an 8-hour advance of sleep. A0628. Poster presentation at the SLEEP meeting, Boston, June 2012.

**Chang A-M**, Buxton OM, Czeisler CA, Duffy JF, Lockley SW, Scheer FAJL, Saxena R. *PER2* polymorphism influences slow-wave sleep in humans. Oral presentation at the SLEEP meeting, Baltimore, June 2013.

**Chang A-M**, Taveras EM, Rifas-Shiman SL, Litonjua A, Gillman MW, Saxena R, Redline S. Circadian rhythm gene variants influence body mass index in children. Oral presentation at the SLEEP meeting, Seattle, June 2015.

Stock A, Lee S, Nahmod, N, Buxton OM, **Chang A-M**. Sleep and Cardiometabolic Health: Should College Students Be Concerned? Poster presentation at the SLEEP meeting, Boston, MA, June 2017.

Mathew GM, **Chang A-M**. Chronic Sleep Restriction Impairs Performance in a Line Orientation Task. Poster presentation at the SLEEP meeting, Boston, MA, June 2017.

Ness K, Ramos AJ, **Chang A-M**, Shearer GC, Buxton OM. Role of Sleep Restriction In Adipocyte Insulin Sensitivity During an Intravenous Glucose Tolerance Test In Healthy Adult Men. Oral and poster presentations at the SLEEP meeting, Boston, MA June 2017.

Li X, Buxton OM, Lee, S, **Chang A-M**, Berger L, Hale L. Sleep mediates the association between adolescent screen time and depressive symptoms. Oral and poster presentations at the SLEEP meeting, Baltimore, MD June 2018.

Mathew GM, Buxton OM, Hale L, **Chang A-M**. Social jetlag is associated with greater depressive symptoms among female adolescents. Poster presentations at the SLEEP meeting, Baltimore, MD June 2018.

Mathew GM, Hale L, **Chang A-M**. Social Jetlag Is Associated with Unhealthy Eating Behaviors and Higher BMI in Adolescents. Oral and poster presentations at the SLEEP annual meeting San Antonio, TX June 2019.

Reichenberger DA, Master L, Hale L, **Chang A-M**. Secondhand smoke exposure is associated with sleep duration during childhood. Oral and poster presentations at the SLEEP annual meeting San Antonio, TX June 2019.

Master L, Nahmod NG, Hale L, **Chang A-M**, Buxton OM. Why so slangry? (sleepy and angry) nightly sleep duration and efficiency predict individual teens' next-day reports of mood. Oral and poster presentations at the SLEEP annual meeting San Antonio, TX June 2019.

Ness KM, Strayer SM, Nahmod NG, **Chang A-M**, Shearer GC, Buxton OM. Sleep restriction suppresses the lipemic response to a standardized high fat dinner in healthy young men. Poster presentation at the SLEEP annual meeting San Antonio, TX June 2019.

Jones RD, Jackson B, **Chang A-M**, Buxton OM, Jackson C. Ethnoracial sleep disparities among college students in the United States: A nationally representative study. Poster presentation at the SLEEP annual meeting San Antonio, TX June 2019.

Reichenberger DA, Ness KM, Strayer SM, Mathew GM, Buxton OM, **Chang A-M**. Heart rate and systolic blood pressure increase during experimental sleep restriction. Poster presentation at the SLEEP annual meeting (virtual due to COVID-19) August 2020.

Mathew GM, Strayer SM, Ness KM, Buxton OM, **Chang A-M**. Vulnerability to sleep restriction is associated with decreased working memory performance. Poster presentation at the SLEEP annual meeting (virtual due to COVID-19) August 2020.

Mathew GM, Strayer SM, Ness KM, Bailey DS, Buxton OM, **Chang A-M**. Lower self-reported alertness and motivation during sleep restriction are associated with decreased attentional performance. Oral and poster presentation at the SLEEP annual meeting (virtual due to COVID-19) August 2020.

Reichenberger DA, Master L, Buxton OM, Hale L, **Chang A-M**. Screen-based activities predict delayed sleep timing within and between adolescents. Oral presentation at the SLEEP annual meeting (virtual due to COVID-19) June 2021.

Mathew GM, Reichenberger DA, Buxton OM, Hale L, **Chang A-M**. Short and long sleep duration, poor sleep quality, and later sleep timing are associated with lower odds of adolescents eating breakfast. Poster presentation at the SLEEP annual meeting (virtual due to COVID-19) June 2021.

Mathew GM, Reichenberger DA, Master L, Buxton OM, **Chang A-M**, Hale L. Too jittery to sleep? Temporal associations of nightly sleep with caffeinated beverage consumption in a large adolescent cohort. Poster presentation at the SLEEP annual meeting, Charlotte, NY June 2022.

Mathew GM, Reichenberger DA, Master L, Buxton OM, **Chang A-M**, Hale L. Sex differences in the association between mood and actigraphic sleep variability in adolescents Poster presentation at the SLEEP annual meeting, Charlotte, NY June 2022.

Krishnan AS, Reichenberger DA, Strayer SM, Master L, Buxton OM, Hale L, **Chang A-M**. Childhood sleep is longitudinally associated with adolescent alcohol and marijuana use. Poster presentation at the SLEEP annual meeting, Charlotte, NY June 2022.

Reichenberger DA, **Chang A-M**, Russell MA. Bidirectional associations of sleep and alcohol use within and between regularly drinking young adults. Oral presentation at the SLEEP annual meeting, Charlotte, NY June 2022.

Reichenberger DA, Master L, Mathew GM, Russell MA, Buxton OM, Hale L, **Chang A-M**. Greater sleep regularity among adolescents is linked with less daytime video game playing. Poster presentation at the SLEEP annual meeting, Indianapolis, IN June 2023. Also selected for datablitz.

Mathew GM, Nahmod NG, Master L, Reichenberger DA, Rosinger A, **Chang A-M**. Effects of a 1-hour nightly weeklong sleep extension pilot study in undergraduates on health. Oral presentation at the SLEEP annual meeting, Indianapolis, IN June 2023.

Mathew GM, Reichenberger DA, Master L, Buxton OM, **Chang A-M**, Hale L. Greater actigraphic sleep variability and later timing are associated with more school-related problems in adolescents. Poster presentation at the SLEEP annual meeting, Indianapolis, IN June 2023.

Lewis S, Master L, Hale L, **Chang A-M**. The relationship between asthma and sleep in adolescents from the Future of Families and Child Wellbeing Study. Poster presentation at the SLEEP annual meeting, Houston, TX June 2024.

Ngam C, Master L, Reichenberger DA, Hale L, **Chang A-M**. The association between maternal closeness and sleep health in adolescence. Poster presentation at the SLEEP annual meeting, Houston, TX June 2024.

Winton J, Reichenberger DA, Mathew GMM, Master L, Rodriguez IR, Hale L, **Chang A-M**. Negative peer interactions among adolescents are associated with more difficulty sleeping. Poster presentation at the SLEEP annual meeting, Houston, TX June 2024.

Collie A, Dadzie A, Master L, Reichenberger DA, Mathew GMM, **Chang A-M**, Hale L, Buxton OM. Perceived discrimination experiences and sleep health among Black young adults. Poster presentation at the SLEEP annual meeting, Houston, TX June 2024.

Dadzie A, Master L, Reichenberger DA, Collie A, Mathew GMM, Hale L, **Chang A-M**, Buxton OM. Ethnoracial differences in the associations between experiencing/witnessing violence and sleep among young adults. Oral and poster presentation at the SLEEP annual meeting, Houston, TX June 2024.