

Margeaux Schade (Gray), Ph.D., RPSGT

Updated 05/22/2024

Mobile: 484-336-3064

Email: margeaux@psu.edu; margeaux.schade@gmail.com

Education

- 01/2017 Doctor of Philosophy, *West Virginia University, Morgantown, WV*
Department: Psychology
Program Area: Behavioral Neuroscience
Advisor/Mentor: Hawley E. Montgomery-Downs, Ph.D.
- 05/2014 Master of Science, Behavioral Neuroscience, *West Virginia University, Morgantown, WV*
Department: Psychology
Program Area: Behavioral Neuroscience
Advisor/Mentor: Hawley E. Montgomery-Downs, Ph.D.
- 02/2009 Bachelor of Science, *Dickinson College, Carlisle, PA*
Majors: Neuroscience and Psychology
-

Current Position

- 07/2020 **Assistant Research Professor**, *Pennsylvania State University, State College, PA*
– present Sleep, Health and Society Co-Laboratory (<https://hhd.psu.edu/bbh/sleep-health-and-society>)
Department: Biobehavioral Health
Supervisor: Orfeu M. Buxton, Ph.D.
Affiliate: Center for Healthy Aging (CHA; <https://healthyaging.psu.edu/people/mmg58>)
- Co-PI of an FDA-regulated Phase I investigational device trial. Co-Investigator of a pilot clinical intervention for young adult sleep extension, pain, and cardiovascular indicators. Acting Site PI/Co-I for a Phase II Insomnia clinical trial. Project Leader of field-based observational research concerning sleep and healthy aging. Intellectually contributed to theoretical, protocol, and data analysis components of funded [NIH (NIA) R44 (SBIR) Phase I & II; NIH (NIA) P01; NSF Phase II] and other [NIH (NHLBI/NIA) R44 (SBIR)] grants with a clinical-translational focus and multiple interdisciplinary (clinical specialists at University of Arizona, including D. Taylor & M. Grandner) and tech industry (SleepSpace, Inc.; Kunesan, Inc.) collaborators. Supported other grant-funded research with sleep-related clinical and data expertise [NIH (NIMH), NIH (NINDS)]. Submitted national-level grants as a PI (DoD CDMRP).
- Led the transition of funded grants from conceptual plans into active data collection on human subjects in inpatient and field-based paradigms involving polysomnography (PSG), including creating laboratory standard operating procedures, Institutional Review Board (IRB) submissions, and COVID-19 pandemic redesign/compliance. Conducted four human subjects research projects as primary coordinator and executor of data collection, including two in collaboration with industry professionals (SBIR/STTR) and an active multi-site, multidisciplinary, inter-institutional project focused on insomnia and healthy aging. Contributed to management of study contracted budgets & advised study actions based on those insights.
- Primary IRB point of contact for several phases of multidisciplinary COVID-19 research under the Data4Action collaborative effort at Penn State. Expanded the specific details of applications and modified human research protection documents based on broader study conceptualization by senior

faculty, to obtain and maintain IRB approval. Coordinated biospecimen management and processing across 4 waves of collection.

Lab Registered Polysomnographic Technologist (RPSGT), including duties such as clinical-quality PSG data collection, evaluation of pulse oximetry and advising medical referral response, staging and scoring PSG records to AASM standards, and training personnel on PSG and oximetry data collection/software.

Collaborated as an author in the preparation of peer-reviewed manuscripts, other published works, and presented clinical laboratory research at international conferences. Volunteered teaching and service to the Department.

Other Research Experience

- 02/2017
– 06/2020 **Postdoctoral Research Scholar**, *Pennsylvania State University, State College, PA*
Sleep, Health and Society Co-Laboratory (<https://hhd.psu.edu/bbh/sleep-health-and-society>)
Department: Biobehavioral Health
Supervisor: Orfeu M. Buxton, Ph.D.
Affiliate: Center for Healthy Aging (CHA; <https://healthyaging.psu.edu/people/mmg58>)
refer to Current Position for details
- 08/2012
– 12/2016 **Graduate Research Assistant**, *West Virginia University, Morgantown, WV*
Program Area: Behavioral Neuroscience
Supervisor: Hawley E. Montgomery-Downs, Ph.D.; Sleep and Sleep Disorders Laboratory
Proposed, designed and completed a prospective, randomized dissertation with intervention that was outside the scope of the laboratory PI's research program to evaluate the impact of sleep fragmentation (simulating the rate of disruption at obstructive sleep apnea clinical threshold without systemic oxygen desaturation) on next-day pressure pain and its relation to sustained attention.
Collaborated with the medical device industry to design an evaluation of the validity of a sleep monitoring device and led preparation of the peer-reviewed manuscript product.
Performed clinical quality polysomnography, multiple sleep latency testing, activity monitoring, and infant sleep classification by direct observation.
Synthesized extant scientific literature, identified gaps in the literature and generated research questions to address those gaps, identified appropriate methodological and statistical techniques to answer research questions, interpreted data and disseminated research outcomes, contributed to grant proposals, and critically evaluated and presented peer-reviewed articles.
- 07/2013
– 01/2017 **Hearing Perception and Cognition Lab Affiliate**, *West Virginia University, Department of Neurobiology and Anatomy, Morgantown, WV*
Supervisor: James W. Lewis, Ph.D. (Neuroscience Dept.)
Led the re-evaluation of event-related potential (ERP) electroencephalographic data by identifying, researching, and applying an analysis technique not yet applied in this lab to strengthen a manuscript (submitted to Hearing Research, see below).
- 01/2015
– 01/2017 **Anxiety, Psychophysiology, and Pain Research Lab Affiliate**, *West Virginia University, Department of Psychology, Morgantown, WV*
Supervisor: Daniel W. McNeil, Ph.D. (Psychology Dept.)
Resourcefully identified a pain-related behavioral measure (pressure algometer) applied regularly in this lab for application in my dissertation project to generate an interdisciplinary collaboration.

Teaching Experience

- 06/2023 **Guest Lecturer**, *Pennsylvania State University, Col. of Health & Human Development, State College, PA*
World Campus, undergraduate research course: "Sleep and Pain"
- 03/2022 **Guest Lecturer** (recurring), *Pennsylvania State University, Dept. of Biobehavioral Health, State College, PA*
– present The Biology of Aging (BBH597), graduate course: "Sleep in the Biology of Aging"
- 02/2017 **Guest Lecturer** (recurring), *Pennsylvania State University, Dept. of Biobehavioral Health, State College, PA*
– present Special Topics on Sleep (BBH497), undergraduate course: "Sleep and Pain"
- 08/2015 **Graduate Teaching Assistant**, *West Virginia University, Dept. of Psychology, Morgantown, WV*
– 05/2016 Supervisors: Ashley B. Petrone, Ph.D.; Miranda N. Reed, Ph.D.; "Biological Foundations of
& 08/2012 Behavior" (Psyc301)
- 05/2013 Primary laboratory instructor, comprised of didactic & practicum, for 6 lab sections (about 150 students) per semester. Taught the interpretation and reporting of statistical outcomes in a research context of computer-based laboratory simulations. Managed all logistical portions of the course, including attendance and grading records.
- Substantially re-designed the laboratory portion of the course for spring 2013, including creation of lecture content, selecting appropriate demonstrations, grading criteria, and lab manual adaptations.
- Delivered three full lectures in the primary instructor's absence (specifically on the topics of neuronal mechanisms and gonadal endocrine function).
- Of 67 evaluations in the final semester, received 98.5% positive overall ratings, 97% positive ratings on the delivery of complex concepts, and 97% positive ratings on clarity/organization during instruction.
- 06/2011 **Polysomnography Instructor**, *Sanford-Brown Institute, Monroeville, PA*
– 04/2012 Supervisor: Kimberly Yannachione, RRT-SDS, RPSGT
- Lecture and lab instructor for eleven polysomnography courses from introductory to advanced, and lecture instructor for one Allied Health course, managing classrooms of up to 28 adult students.
- Developed curricula and created assessments for four 10-week (up to 80 hour) PSG courses being taught for the first time.

Publications

In Preparation

Schade, M. M., Ji, L., Shen, Y., Master, L., Lipton, R., Derby, C., & Buxton, O. M. A daily predictive, bidirectional relationship between objective sleep and pain among older adults: Results from the Einstein Aging Study. *In Prep*

Schade, M. M., Roberts, D. M., Gartenberg, D., Taylor, D. J., Emert, S. E., Nagy, S., Russell, A., Mueller, M., Gamaldo, A. A., & Buxton, O. M. Randomized controlled trial of telehealth: Technology-assisted CBTI+, CBTI, and sleep hygiene in older adults. *In Prep*

Peer-Reviewed Original Reports

Emert, S.E., Taylor, D.J., Gartenberg, D., Schade, M.M., Roberts, D.M., Russell, M., Nagy, S.M., Huskey, A., Gamaldo, A., & Buxton, O.M. (2023). A non-pharmacological multi-modal therapy to improve sleep and cognition and reduce mild cognitive impairment risk: Design and methodology of a randomized clinical trial. *Clinical Trials*, 132, 107275. <https://doi.org/10.1016/j.cct.2023.107275>

Roberts, D. M., Schade, M. M., Master, L., Honavar, V. A., Nahmod, N. G., Chang, A. M., Gartenberg, D., & Buxton, O. M. (2023). Performance of an open machine learning model to classify sleep/wake from actigraphy across ~ 24-hour intervals without knowledge of rest timing. *Sleep Health*, 9(5), 596-610. <https://doi.org/10.1016/j.sleh.2023.07.001>

- Ji, L., Wallace, M., Master, L., Schade, M. M., Zhaoyang, R., Derby, C., & Buxton, O. M. (2023). Six multidimensional sleep health facets in older adults identified with factor analysis of actigraphy: Results from the Einstein Aging Study. *Sleep Health*, 9(5), 758-766. <https://doi.org/10.1016/j.sleh.2023.03.002>
- Reichenberger, D., Ness, K., Strayer, S., Mathew, G. M., Schade, M. M., Buxton, O. M., & Chang, A.-M. (2023). Recovery sleep following sleep restriction is insufficient to return elevated daytime heart rate and systolic blood pressure to baseline levels. *Psychosomatic Medicine*, 85(8), 744-751. DOI: 10.1097/PSY.0000000000001229
- Ji, L., Zhaoyang, R., Jiao, J. L., Schade, M. M., Bertisch, S., Derby, C. A., Buxton, O. M., & Gamaldo, A. A. (2023). Discrimination and education quality moderate the association of sleep with cognitive function in older black adults: Results from the Einstein Aging Study. *The Journals of Gerontology: Series B*, 78(4), 596-608. <https://doi.org/10.1093/geronb/gbac183>
- Gu, Y., Han, F., Sainburg, L. E., Schade, M. M., Buxton, O. M., Duyn, J. H., & Liu, X. (2022). An orderly sequence of autonomic and neural events at transient arousal changes. *NeuroImage*, 264, 119720. <https://doi.org/10.1016/j.neuroimage.2022.119720>
- Mathew, G. M., Strayer, S. M., Ness, K. M., Schade, M. M., Nahmod, N. G., Buxton, O. M., & Chang, A. M. (2021). Interindividual differences in attentional vulnerability moderate cognitive performance during sleep restriction and subsequent recovery in healthy young men. *Scientific Reports*, 11(1), 1-15. <https://doi.org/10.1038/s41598-021-95884-w>
- Mathew, G. M., Strayer, S. M., Bailey, D. S., Buzzell, K., Ness, K. M., Schade, M. M., Nahmod, N. G., Buxton, O. M. and Chang, A.-M. (2021). Changes in subjective motivation and effort during sleep restriction moderate interindividual differences in attentional performance in healthy young men. *Nat Sci Sleep*, 13, p.1117. <https://doi.org/10.2147/NSS.S294409>
- Arnold, C. R., Srinivasan, S., Rodriguez, S., Rydzak N., Herzog, C. M., Gontu, A., Bharti, N., Small, M., Rogers, C. J., Schade, M. M., Kuchipudi, S. V., Kapur, V., Read, A., & Ferrari M. (2022). A longitudinal study of the impact of university student return to campus on the SARS-CoV-2 seroprevalence among the community members. *Sci Rep*, 12, 8586. <https://doi.org/10.1038/s41598-022-12499-5>
- Talkington, W., Donai, J., Kadner, A.; Layne, M., Forino, A., Wen, S., Gao, S., Gray, M. M.; Ashraf, A., Valencia, G., Smith, B., Khoo, S., Gray, S., Lass, N., Brefczynski-Lewis, J., Engdahl, S., Graham, D., Frum, C., & Lewis, J. (2020). Electrophysiological evidence of early cortical sensitivity to human conspecific mimic voice as a distinct category of natural sound. *Speech, Language, and Hearing Research*. https://doi.org/10.1044/2020_JSLHR-20-00063
- Schade, M. M., Mathew, G. M., Roberts, D. M., Gartenberg, D., & Buxton, O. M. (2020). Enhancing slow oscillations and increasing N3 sleep proportion with supervised, non-phase-locked pink noise and other non-standard auditory stimulation during NREM sleep. *Nat Sci Sleep*, 12, 411-429. <https://dx.doi.org/10.2147%2FNSS.S243204>
- Roberts, D. M., Schade, M. M., Mathew, G. M., Gartenberg, D., & Buxton, O. M. (2020). Detecting sleep using raw data from multisensor consumer-grade wearables, relative to wrist actigraphy and polysomnography. *SLEEP*, 43(7). <https://doi.org/10.1093/sleep/zsaa045>
- Bauer, C. E., Lewis, J. W., Brefczynski-Lewis, J., Frum, C., Schade, M. M., Haut, M. W., & Montgomery-Downs, H. E. (2020). Breastfeeding duration is associated with regional, but not global, differences in white matter tracts. *Brain Sciences*, 10(1), 19-30. <https://doi.org/10.3390/brainsci10010019>

Ness, K. M., Strayer, S. M., Nahmod, N. G., Schade, M. M., Chang, A. M., Shearer, G. C., & Buxton, O. M. (2019). Four nights of sleep restriction suppress the postprandial lipemic response and decrease satiety. *J Lipid Res*, *60*(11), 1935-1945. DOI: 10.1194/jlr.P094375

Schade, M. M., Bauer, C. E., Murray, B. R, Gahan, L., Doheny, E. P., Kilroy, H., Zaffaroni, A., & Montgomery-Downs, H. E. Sleep validity of a non-contact bedside movement and respiration-sensing device (2019). *J Clin Sleep Med*, *15*(07), 1051-1061. <http://dx.doi.org/10.5664/jcsm.7892>.

Commentary: Rapoport, D.M. (2019). Non-Contact sleep monitoring: Are we there yet? *J Clin Sleep Med*, *15*(07), 935-6. <http://dx.doi.org/10.5664/jcsm.7864>.

Commentary: Hunasikatti, M. (2019). Non-contact sensors: Need for optimum information is more important than convenience. *J Clin Sleep Med*, *15*(11), 1707.

Response to Commentary: Schade, M. M. & Montgomery-Downs, H. E. (2019). Utility encompasses both clinical translation and ecologic validity. *J Clin Sleep Med*, *15*(11), 1709.

Chen, T., Lee, S., Schade, M. M., Saito, Y., Chan, A., & Buxton, O. M. (2018). Longitudinal relationship between sleep health and pain symptoms among community-dwelling older adults in Japan and Singapore. *SLEEP*, <https://doi.org/10.1093/sleep/zsy219>.

Books/Chapters and Other Work

Schade, M. M., Roberts, D. M., Honavar, V. G., & Buxton, O. M. (2023). “Machine learning approaches in sleep and circadian research,” in *Encyclopedia of Sleep and Circadian Rhythms, 2nd Edition*, Cleto Kushida ed. (Academic Press). p.53-62.

Schade, M. M. & Montgomery-Downs, H.E. (2017). Polysomnography. In A. E. Wenzel (Ed.), *The SAGE Encyclopedia of Abnormal and Clinical Psychology*. Thousand Oaks, CA: SAGE Publications, Inc.

Schade, M. M., Bauer, C. E., Warren, C. N., & Montgomery-Downs, H. E (2016). Synopsis of sleep in infants, children and adolescents. In S. R. Pandi-Perumal (Ed.), *Synopsis of Sleep Medicine*. Waretown, NJ: Apple Academic/CRC Press.

Abstracts

Schade, M. M., Roberts, D. M., Gartenberg, D., Taylor, D. J., Emert S. E., Nagy, S., Torres-Negron, A., Russell, M., Mueller, M., Gamaldo, A. A., & Buxton, O. M. *Randomized controlled trial of telehealth: Technology-assisted CBTI+, CBTI, and Sleep Hygiene in older adults*. Accepted for presentation at the Associated Professional Sleep Societies 2024, Houston, TX.

Bertisch, S., Ji, L., Schade, M.M., Graham-Engeland, J.E., Derby, C.A., Engeland, C.G., & Buxton, O.M. *Associations between sleep-disordered breathing and inflammatory markers: Results from the Einstein Aging Study*. Poster presented at the Alzheimer’s Association International Conference 2023, Amsterdam, NE.

Roberts, D. M., Schade, M. M., Chang, A. M., Honavar, V., Gartenberg, D., & Buxton, O.M. *Performance evaluation of a 24-hour sleep-wake state classifier derived from research-grade actigraphy*. Poster presented at the annual meeting of the Associated Professional Sleep Societies 2022, Charlotte, NC.

Ji, L., Wallace, M. L., Master, L. M., Schade, M. M., Zhaoyang, R., Derby, C. A., & Buxton, O. M. *Factor analysis of multidimensional sleep health domains in older adults with actigraphy: Results from the Einstein Aging Study*. Poster presented at the annual meeting of the Associated Professional Sleep Societies 2022, Charlotte, NC.

Roberts, D. M., Schade, M. M., Mathew, G. M., Gartenberg, D., & Buxton, O. M. *Development of a momentary sleep versus wake classification algorithm using balanced data from two multisensory consumer wearable*

devices. Poster presented at the annual meeting for the Society of Behavioral Sleep Medicine 2019, Birmingham, AL.

Schade, M. M., Roberts, D. M., Gartenberg, D., Mathew, G. M., & Buxton, O. M. *Auditory stimulation during sleep transiently increases delta power and all-night proportion of NREM stage 3 while preserving total sleep time and continuity*. Nanosymposium oral presentation at the annual meeting for the Society of Neuroscience 2018, San Diego, CA.

Schade, M. M., Bauer, C. E., Murray, B. R., Gahan, L., Doheny, E. P., Kilroy, H., Zaffaroni, A., & Montgomery-Downs, H. E. *Sleep validity of a non-contact bedside movement and respiration-sensing device*. *J of Sleep and Sleep Disorders Res*, 40, A290-291. Poster presented at the annual meeting of the Associated Professional Sleep Societies 2017, Boston, MA.

Schade, M. M. & Montgomery-Downs, H. E. *Experimental fragmentation modeling low-level OSA does not alter perceived pressure-pain threshold or tolerance*. *SLEEP*, 40, A159. Poster presented at the annual meeting of the Associated Professional Sleep Societies 2017, Boston, MA.

Schade, M. M., Clegg-Kraynok, M., Montgomery-Downs, H. E. *Sleep and recreational psychostimulant use*. Poster presented at the annual meeting for the Society for Neuroscience 2015, Chicago, IL.

Arias, M. C., Schade, M. M., Hayes, S., McNeil, D. W., Crout, R. J., Foxman, B., Marazita, M. L., Maurer, J. L., Neiswanger, K., & Weyant, R. J. *Maternal depression is associated with infant sleep awakenings among women in Appalachia*. Poster presented at the annual meeting of the Association for Behavioral and Cognitive Therapies 2015, Chicago, IL.

Schade, M. M. & Montgomery-Downs, H. E. *Unique pre-sleep movement patterns at 6 weeks postpartum*. Poster presented at the annual meeting of the Associated Professional Sleep Societies 2015, Seattle, WA.

Schade, M. M. & Montgomery-Downs, H. E. (2015). *Cycle-based evaluation of neonatal sleep architecture indicates differing sleep pressures than window-based observation*. *Developmental Psychobiology*, 57. Poster presented at the annual meeting of the Associated Professional Sleep Societies 2015, Seattle, WA. Poster presented at the annual meeting of the International Society for Developmental Psychobiology 2014, Washington, DC.

Lewis, J. W., Talkington, W. J., Smith, B., Khoo, S., Frum, C., Graham, D. W., & Schade, M. M. *Auditory evoked potentials reveal harmonic structure as a signal attribute*. Poster presented at the annual meeting of the Society for Neuroscience 2014, Washington, DC.

Schade, M. M. & Montgomery-Downs, H. E. *Unveiling early changes in neonatal sleep microarchitecture: Contribution of unanesthetized surgery*. Poster presented at the annual meeting of the Associated Professional Sleep Societies 2014, Minneapolis, MN.

Schade, M. M., Thoman, E. B., & Montgomery-Downs, H. E. *Acute effects of unanesthetized circumcision on neonatal sleep behavior*. Poster presented at the annual meeting of the Associated Professional Sleep Societies 2013, Baltimore, MD.

Invited Talks

- 10/2012 **Invited Group Lecture**, *United States Penitentiary – Hazelton, Preston County, WV*
Presented sleep disorder topics to trainee clinicians practicing in a maximum-security penitentiary.
- 04/2013 **Invited Group Lecture**, *The Village at Heritage Point, Morgantown, WV*
“Sleep and Healthy Aging”
Topics directed toward an audience of older-adult retirement community residents.
- 09/2013 **Invited Speaker**, *West Virginia Sleep Society Annual Conference, Wheeling, WV*
“Demystifying the EEG: Signal source and trace”

Topics directed toward an audience of practicing clinicians and registered sleep technologists.

- 04/2016 **Invited Speaker**, *U92 WVU-FM Radio, Morgantown, WV*
“Community Feedback: Psychobiology of Sleep”
Broadcasted interview with topics directed toward a lay audience regarding college community perceptions of sleep.
- 11/2018 **Oral Presentation**, Schade, M. M., Roberts, D. M., Gartenberg, D., Mathew, G. M., & Buxton, O. M. “Auditory stimulation during sleep transiently increases delta power and all-night proportion of NREM stage 3 sleep while preserving total sleep time and continuity.”
Nanosymposium oral presentation at the annual meeting of the Society for Neuroscience 2018, San Diego, CA.
- 12/2019 **Invited Speaker**, *Dickinson College Neuroscience Club, Carlisle, PA*
“Current Research in Sleep and Career Development”
Topics directed toward an undergraduate audience majoring in Neuroscience.
- 10/2020 **Invited Speaker**, *Osher Lifelong Learning Institute (OLLI), University Park, PA*
“Systematic Auditory Stimulation for Sleep Improvement”
Topics directed toward an older-adult community audience.
- 05/2021 **Invited Speaker**, *Sleep Research Society Trainee Symposia Series [APSS/SLEEP 2021]*
“Sleep and Pain”
Co-lecture with Key Opinion Leader (KOL) on the topic, Dr. Monika Haack
- 08/2021 **Invited Speaker**, *Mt Nittany Residences, State College, PA*
“Sleep, Health, and Physical Activity”
Topics directed toward an older-adult community audience.
- 01/2022 – 10/2022 **Invited Speaker**, multiple locations: *Foxdale Village, PA; Juniper Village, PA; Liberty Hill, PA; Stonebridge Apts., PA; Osher Lifelong Learning Institute (OLLI), PA*
“Healthy Older Adult Sleep and Insomnia”
Topics directed toward an older-adult community audience.

Grant Support

- 05/2017 – 04/2018 Name of Project: Non-pharmacological improvement of sleep structure in midlife and older adults (NSF-SBIR)
Principal Investigator: Daniel Gartenberg
Source of Funding: Mobile Sleep Technologies L.L.C.
Total Award Amount: \$113,233
Role: Project Leader (point person for project logistics and execution); RPSGT
- 05/2018 – 04/2019 Name of Project: Non-pharmacological improvement of sleep structure in older people (NIH-NIA)
Principal Investigator: Daniel Gartenberg
Source of Funding: Mobile Sleep Technologies L.L.C.
Total Award Amount: \$347,058
Role: Project Leader (point person for project logistics and execution); RPSGT
- 07/2019 – 06/2020 Name of Project: Facilitated Research Award for Aging Study Baseline Sleep Data (“EcoSleep”)
Principal Investigator: Martin Sliwinski (U-02); Orfeu Buxton (Facilitated Award)
Source of Funding: Penn State Social Science Research Institute (SSRI) Facilitated Award, via NIA U-02 (U2CAG060408) for the Mobile Monitoring of Cognitive Change (M2C2)
Total Award Amount: \$26,880
Role: Project Leader (point person for project logistics and execution); RPSGT

- 08/2020
– 07/2021
Name of Project: Multimodal study of infra-slow propagating brain activity. (NIH-NIMH R01, 1R01MH123247-01)
Principal Investigator: Xiao Liu
Total Award Amount: \$1,280,354 (through 2023)
Role: Key Personnel (point person for EEG data processing and analysis); RPSGT
- 03/2020
– 05/2023
Name of Project: Data4Action
Principal Investigator: Susan McHale; Andrew Read
Source of Funding: The Pennsylvania State University SSRI, CTSI, Provost, and Huck Neuroscience Institute (Internal)
Total Award Amount Requested: \$10,800 [2019-2020]; \$70,000 [2020-2021]; \$50,000 [2021-2023]
Role: Personnel (point person for IRB and all hair Cortisol biospecimen aspects)
- 04/2020
– 05/2023
Name of Project: A non-pharmacological multi-modal therapy to improve sleep and cognition and reduce mild cognitive impairment risk. [“ICanSleep”] (NIH-NIA SBIR Phase II, R44 AG056250)
Principal Investigator: Daniel Gartenberg; Sub-Award PI: Orfeu Buxton
Source of Funding: Proactive Life, Inc. (Sub-Award)
Total Award Amount: \$2,478,346; Sub-Award Amount: \$972,559
Role: Key Personnel (point person for sub-award project logistics and execution); RPSGT
- 08/2021
– 08/2022
Name of Project: The role of brain arousal in resting-state functional MRI. (NIH-NINDS R01, 5R01NS113889-02)
Principal Investigator: Xiao Liu
Total Award Amount: \$349,273 (through 2023)
Role: Personnel (point person for ambulatory data collection methods and logistical guidance)
- 12/2021
– 11/2022
Name of Project: Can more sleep improve pain responses, symptomatology, and regulation in students?
Principal Investigator: Anne-Marie Chang
Source of Funding: The Pennsylvania State University Dept of Biobehavioral Health SEED Grant
Total Award Amount: \$10,000
Role: Co-Investigator
- 06/2021
– 06/2023
Name of Project: Use of the Frequent-ZZZ Sleep Pad to Increase Restorative Sleep: A Proof-of-Concept Study (Investigator-Initiated Trial)
Co-Principal Investigator: Anne-Marie Chang
Source of Funding: Sponsor-Initiated Trial – Kunasan, Inc.
Total Award Amount: \$181,985
Role: Co-PI
- Re-Submitted*
Name of Project: Development of SleepSpace: A non-pharmacological multi-modal therapy to improve sleep and cognition and reduce mild cognitive impairment risk (NIH-NIA R44 AG056250-05) [Score: 48]
Principal Investigator: Daniel Gartenberg (Site PI: Buxton)
Sub-Award Amount: \$616,366
Role: Co-Investigator
- Re-Submitted*
Name of Project: A new stand-alone or sleep specialist assisted teletherapy to improve CPAP compliance, sleep apnea outcomes, and cardiometabolic function (NIH-NHLBI PA-22-177)
Principal Investigator: Daniel Gartenberg (Site PI: Buxton)
Sub-Award Amount: \$575,179
Role: Co-Investigator

Circulation (Co-Review with O.M. Buxton, 06/2017)
Journal of Neurophysiology (Co-Review with O.M. Buxton, 09/2017 & 12/2017)
Sleep Health (08/2019)
Journal of Clinical Sleep Medicine (Co-Review with O.M. Buxton, 01/2020)
Physiology and Behavior (08/2020)
Journal of Gerontology (10/2022, 03/2023, & 04/2023)
Social Science & Medicine (11/2022)
Nature & Science of Sleep (07/2023)
Nature Partner Journal Digital Medicine (07/2023)
Scientific Reports (12/2023)
Frontiers in Neuroscience Neuroinformatics (12/2023)

Clinical Employment

04/2009
– 04/2011 **Registered Polysomnographic Technologist (RPSGT)**, *Z-Sleep Diagnostics, Manhattan, KS*
Supervisor: Sheila R. Rogge, RN
Technical Director and primary scoring technologist of a 4-bed sleep lab.
Communicated the purpose of, and procedures involved in, a sleep study (PSG) to sleep lab patients (pediatric through geriatric). Performed PSG hookups and recordings for nighttime patients; prepared for and executed MSLT/Narcolepsy and MWT testing.
Administered CPAP, BiPAP, Adaptive Servo-Ventilation, and supplemental oxygen to patients indicating sleep disordered breathing or nocturnal hypoxemia, based on analysis and interpretation during data acquisition.
Scored sleep studies to American Academy of Sleep Medicine (AASM) standards for future physician interpretation and diagnosis; created thorough data summaries to be included in the final study report.
Instructed patients of proper Positive Airway Pressure (PAP) mask fitting techniques, cleaning, and care of PAP durable medical equipment. Ensured patient understanding of, and compliance with, PAP therapy through patient education and follow-up care. Liaison for discussing individual patient data with their primary care physician as needed.

Clinical Licensure

06/2010
– present Registered Polysomnographic Technologist (RPSGT, exp. June 2025)

Professional Organization Membership

Pennsylvania Sleep Society (PASS) – *member*, 2015-2019
PsiChi – *member*, 2013-present
Sleep Research Society (SRS) – *member*, 2012-present
Society for Neuroscience (SfN) – *member*, 2014-2019
West Virginia Sleep Society (WVSS) – *member*, 2012-2019

Elected board member, 2013-2015

Scholarship chair, 2014-2015

Developed and implemented a scholarship program for first-time conference attendees and continuing technologist education during tenure.
