Curriculum Vitae
Matthew P. Walker

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Research Overview

Work in my lab examines the role of sleep in human health and disease. We employ brain imaging methods (MRI, PET scanning), high-density sleep EEG recordings, genomics, proteomics, autonomic physiology, brain stimulation, and cognitive testing. We address issues of both wellness and disease. Disorders that we currently investigate include Alzheimer's disease, Parkinson's disease, cancer, depression, anxiety, insomnia, cardiovascular disease, drug abuse, obesity, and diabetes. Additionally, we are developing novel software and hardware technologies for sleep optimization, diagnosis, and treatment. Our goal, unachievable as it may be: understand everything about sleep's impact on the human being, from birth to death, in health and in sickness.

Degrees

Nottingham University, Nottingham, UK B.Sc. 1996 Neuroscience
Medical Research Council, London, UK Ph.D. 1999 Neurophysiology

Appointments

2026- Professor of Neuroscience and Biomedical Engineering, The University of Texas at Dallas
2026- Director, Sleep Innovation Laboratories, Center for BrainHealth, UT Dallas
2014-2025 Professor of Psychology & Neuroscience, University of California, Berkeley
2010-2014 Associate Professor of Psychology & Neuroscience, University of California, Berkeley
2007-2010 Assistant Professor of Psychology & Neuroscience, University of California, Berkeley
2005-2007 Assistant Professor of Psychology, Harvard Medical School, Boston, MA
2002-2004 Instructor, Department of Psychiatry, Harvard Medical School, Boston, MA
2001-2002 Lecturer, Department of Psychology, Harvard University, Cambridge, MA
1999 Visiting Fellow, Royal College of Psychiatry, London, UK

Selected Honors and Awards

2020 Carl Sagan Prize for Science Achievements
2006 National Academy of Sciences: Kavli Fellow

2006 American Academy of Sleep Medicine: Faculty Scholarship for Promising Minds
2005 Harvard Dean's List for Outstanding Teaching - Faculty of Arts and Sciences
1998 Pfizer Award for Achievements in Psychiatry Research

Bibliography

For all publications, see:
https://www.ncbi.nlm.nih.gov/myncbi/matthew.walker.1/bibliography/public/

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3. Lendner JD, Niethard N, Mander BA, van Schalkwijk FJ, Schuh-Hofer S, Schmidt H, Knight RT, Born J, Walker MP, Lin JJ, Helfrich RF. Human REM sleep recalibrates neural activity in support of memory formation. **Science Advances**. 2023 Aug;9(34):eadj1895. doi: 10.1126/sciadv.adj1895. PubMed PMID: 37595044; PubMed Central PMCID: PMC10438450.
4. Vallat R, Shah VD, Walker MP. Coordinated human sleeping brainwaves map peripheral body glucose homeostasis. **Cell Reports Medicine**. 2023 Jul 18;4(7):101100. doi: 10.1016/j.xcrm.2023.101100. PubMed PMID: 37421946; PubMed Central PMCID: PMC10394335.
5. Stafford PL, Harmon E, Patel P, Walker M, Akoum N, Park SJ, Cho Y, Bilchick K, Mehta N, Mazimba S, Cho Y, Kwon Y. Positional obstructive sleep apnea in patients with atrial fibrillation. **Sleep Breath**. 2023 May;27(2):487-494. doi: 10.1007/s11325-022-02625-y. Epub 2022 May 10. PubMed PMID: 35538180; PubMed Central PMCID: PMC10349247.
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7. Ben Simon E, Vallat R, Rossi A, Walker MP. Sleep loss leads to the withdrawal of human helping across individuals, groups, and large-scale societies. **PLoS Biol**. 2022 Aug;20(8):e3001733. doi: 10.1371/journal.pbio.3001733. eCollection 2022 Aug. PubMed PMID: 35998121; PubMed Central PMCID: PMC9398015.
8. Robbins R, Quan SF, Buysse D, Weaver MD, Walker MP, Drake CL, Monten K, Barger LK, Rajaratnam SMW, Roth T, Czeisler CA. A Nationally Representative Survey Assessing Restorative Sleep in US Adults. **Front Sleep**. 2022;1. doi: 10.3389/frsle.2022.935228. Epub 2022 Jul 21. PubMed PMID: 36042946; PubMed Central PMCID: PMC9423762.
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All publications:
https://www.ncbi.nlm.nih.gov/myncbi/matthew.walker.1/bibliography/public/

Funding

Pending Research Support

1R01AG086848-01 (PI Walker) (first round Grant Score 17%) 04/01/2026 – 03/31/2031
NIH National Institute of Health
Age-related sleep impairment as a novel pathway through which loneliness and social isolation instigate adverse brain- and body-health outcomes. The award seeks to test the hypothesis that age-related sleep disruption represents a central pathway explaining how and why loneliness and social isolation lead to impairments in both physiological body health and in brain health. If affirmed, these studies would establish a previously unrecognized neural and physiological mechanistic understanding of how, and why endemic loneliness and social isolation compromise physical, cognitive, and emotional health in the elderly, and establish sleep improvement as a novel intervention target.

Ongoing Research Support

R01 MH126901 (PI Walker) 07/01/2021– 06/31/2026
NIH National Institute of Health
Sleep Impairment: A Mechanism Explaining Neuropsychiatric Symptoms in Alzheimer's
This award tests the core mechanistic hypothesis that the impact of beta-amyloid (Aβ) burden on anxiety is orchestrated through Aβ-related impairment of NREM slow-wave sleep, which in turn, amplifies next-day anxiety through impaired mPFC-amygdala emotional brain regulation.

Completed Research Support

R01 AG031164 (PI Walker) 04/01/2016 – 03/31/2022
NIH National Institute of Health
Amyloid Neuropathology Underlying Sleep-dependent Memory Decline in Older Adults
This project is to use a combined neuroimaging and episodic memory measures approach to study the relationship between hippocampal memory consolidation, beta-amyloid and sleep.
R01 AG054019 (PI Walker) 07/01/2016 – 6/30/2021

NIH National Institute of Health
A sleep electroencephalography biomarker predicting Alzheimer's disease pathology
This project will determine whether sleep physiology is a novel, inexpensive, and early diagnostic tool for determining Alzheimer's disease risk and progression before clinical symptoms emerge.
R01 AG 031164 (PI Walker) 08/01/14 - 07/31/20
NIH National Institute of Health
Sleep Loss, Human Memory and Brain Plasticity across the lifespan
This project examines how age-related decline in sleep impacts age-related cognitive decline.
R01 MH093537 (PI Walker) 02/01/2012 – 01/31/2018
NIH National Institute of Mental Health
Anxiety, Sleep Disruption and Emotional Brain Dysregulation
This project seeks to characterize the anxiogenic consequence of insufficient sleep on mechanisms of emotional regulation in high- relative to –low anxious individuals.
DARPA-BAA-15-34-160573-DS (PI Walker) 12/01/2016 – 11/30/2017
DARPA
Spatiotemporal Identification of Human Memory Replay
This project seeks to characterize human memory replay during wake and sleep in MRI and EEG patterns of activity.
R21 DA 031939 (PI Walker) 05/01/12 - 04/30/14
NIH/NIDA
Neural consequences of sleep loss and sleep recovery on the human reward system
20092-751 (PI Walker) 06/15/2009 – 12/14/2011
Actelion Clinical Research, Inc.
Identifying the source of cognitive dysfunction and subjective complaints in chronic insomnia
AASM-01030482 (PI Walker) 07/01/06 - 06/30/08
American Academy of Sleep Medicine
The Impact of Sleep Deprivation on Learning and Brain Plasticity
R03 MH 069935 (PI Walker) 06/01/04 - 06/30/07
NIH/NIMH
The Neural Correlates of Sleep-Dependent Motor Learning
R21 MH 067754 (Co-PI) 06/01/03 - 06/30/06
NIH/NIMH
fMRI Visualization Of The Human Brain During Sleep-Onset
BCS-0121953 (PI Walker) 11/01/01-10/31/03
National Science Foundation
The neurocognitive dynamics of sleep-onset: An fMRI study

Teaching

University of California, Berkeley
Undergraduate
2007-present The Psychology of Sleep (Psych133)
This course has three primary goals: (1) to provide a basic introduction to the study of sleep and an overview of sleep measurement, regulation, ontogeny, phylogeny, and brain physiology; (2) discuss the role of sleep in numerous brain and body functions; and (3) outline the abnormalities of sleep that occur in, and even contribute to, medical disorders.
2008-2020 Introduction to Biological Psychology (Psych110)

Survey of relations between behavioral and biological processes. Topics include sensory and perceptual processes, neural maturation, natural bases of motivation, and learning.
2020-present Sleep: From Science to Society (and everything in-between) (Psych118)
Examination of sleep from cellular and molecular levels, to whole brains, clinical disorders, then across species, across cultures, and at a societal (e.g., schools, medicine, government/public policy).

Graduate

2018-present Cognitive Neuroscience Colloquium (Psych229B)
Provides training in a variety of teaching techniques, reviews relevant pedagogical issues, and assists graduate students in mastering their initial teaching experiences.
2011-2014 Teaching Psychology (Psych300/301)
Provides training in a variety of teaching techniques, reviews relevant pedagogical issues, and assists graduate students in mastering their initial teaching experiences.
2008-present Cognitive Neuroscience of the Sleeping Brain (Psych290B)
Examination of the neural basis and cognitive mechanisms of sleep-dependent memory processing, creativity and emotional regulation.
2007-2022 Current Concepts in Sleep Research (Psych290B co-taught w/Prof. Allison Harvey)
Course goal is to symbiotically connect basic with clinical sleep research, building a translational understanding of brain mechanisms with clinical syndromes.

Harvard University

Spring 2005 – 2007 Biology of Conscious States: Waking, Sleeping and Dreaming
Undergraduate seminar in the Mind, Brain and Behavior program at Harvard University faculty of Arts and Sciences, Department of Psychology.
(awarded Harvard Dean's List for Outstanding Teaching 2005, 2007)

Graduate Students & Postdoctoral Fellows

Postdoctoral Fellows:

*Jeffrey Ellenbogen (MD, PhD, U. Pennsylvania) Faculty, Harvard Medical School (Neurology)
Masaki Nishida (MD, PhD, Tokyo Medical U) Faculty, Tokyo Medical U (Psychiatry)
Jessica Payne (PhD, U. Arizona) Faculty, Notre Dame (Psychology)
Kenichi Kuriyama (MD, PhD, Tokyo Medical U) Section Chief, NIMH, Tokyo, Japan
*Bryce Mander (PhD, Northwestern) Faculty UC Irvine
Ingrid Nieuwenhuis (PhD, Donders Institute) Facebook lead scientist
*Arielle Tambini (PhD, NYU) Faculty UC Irvine
Eti Ben Simon (PhD, Tel Aviv University) Currently in lab
Raphael Vallat (PhD, University of Lyon) Currently in lab
**Frank Hsieh (PhD, UC Davis) Currently in lab

Graduate Students:

***Els van der Helm Psychology Junior Associate Consultant: McKinsey & Company
**Jared Saletin Psychology Faculty at Brown
*Stephanie Greer Neuroscience Scientist at Apple
*Andrea Goldstein Neuroscience Faculty at Stanford
Adam Krause Psychology Postdoctoral Fellow at Stanford
*Joe Winer Psychology Postdoctoral Fellow at Stanford
Vyoma Shah Psychology Currently in lab
Tenzin Disel Psychology Currently in lab
*NIH NRSA recipient ** NSF fellowship recipient *** Fulbright fellowship recipient

Editorial & Professional Roles

2012- Deputy Editor– journal: SLEEP
2010- Associate Editor– journal: SLEEP
2007- Associate Editor – journal: Frontiers in Neuroscience
2010- Sleep Research Society (SRS) – Committee Member

Ad hoc referee

Science
Neuron
Nature Neuroscience
Sleep
Current Biology
Cerebral Cortex
Journal of Neuroscience
Biological Letters
Psychological Science
Journal of Sleep Research
Quarterly Journal of Experimental Psychology
Sleep Medicine
Neuroimage
Cognitive Brain Research
Neuroscience
Physiology and Behavior
Journal of Cognitive Neuroscience
Human Brain Mapping
PLoS ONE
Proc Natl Acad Sci U S A
Nature Reviews Neuroscience

Professional Memberships

Cognitive Neuroscience Society
Society for Neuroscience
Royal College of Psychiatry
The Associated Professional Sleep Societies
Association for Psychological Science
Sleep Research Society

Teaching and Mentorship

Since arriving at UC Berkeley in 2007, I have routinely taught three graduate seminars in biological psychology, a large undergraduate class, The Psychology of Sleep (Psych 133), and another large undergraduate class, An Introduction to Biological Psychology (Psych 110).

Ratings for my graduate classes are consistently high. For example, my average scores for 290B have been 6.8 for instructor effectiveness (Department average of 6.51) and a 6.8 for overall course effectiveness (department average of 6.19). Similar or better scores were attained during the other offerings of this seminar.

For 290B, students were kindly positive, noting, "This was an excellent class. Thanks for creating a space for all of us to think critically about the state of sleep science" and "This

was a great course, and I learned a lot about Sleep Psychology through it - thank you for a great semester!", for example.
Regarding my undergraduate offering of Psych 133, my scores are stronger, with an average instructor effectiveness score of 6.89 (Department average is 5.87) and a course effectiveness of 6.87 (Departmental average is 5.7). For Psych 110, my average instructor effectiveness score was similarly high, with a score of 6.67.
As expected, given these numerical ratings, students for both classes had very kind things to say such as, "best class I have ever taken at CAL," "One of the best classes I have taken at Cal. Every lecture is like a Ted Talk, so informative and engaging," "interesting material and incredibly passionate, thorough lecturer" for Psych 133. Students of Psych 110 stated, "One of my favorite classes in Berkeley," "He makes the topic interesting and relevant," and "Best course and best professor."

Service

I have consistently served on numerous committees at the campus (member of the Advisory Committee of the Brain Imaging Center) and department levels (e.g., Community Building & Cohesion committee), as well as several department searches. In terms of contributions to the field, I have served as a committee member for the Sleep Research Society (SRS) from 2010 through 2020.
I have committed myself to the mission of increasing awareness worldwide about the import of sleep for health, and to provide scientifically based guidance to those who want to improve their sleep. My best-selling book, Why We Sleep, widely viewed Ted talks (20M views currently), and frequent talks to corporate and media groups all contribute to helping the public and key public health officials understand the need to take on these issues at a public and individual level.
In recognition of the emphasis I have placed on service in the public sphere in particular, in 2020, I was humbled to be awarded the Carl Sagan Prize for Science Achievements, an annual prize to recognize researchers who "have contributed mightily to the public understanding and appreciation of science."