

ADRIANA PATRYCJA MICHALAK

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EMPLOYMENT

IMT School for Advanced Studies, Lucca, Italy
Molecular Mind Laboratory (MoMiLab)
Sleep, Plasticity And Conscious Experience (SPACE) Group
Postdoctoral Researcher
Feb. 2022 – Present

EDUCATION

University of East Anglia, Norwich, England
Faculty of Medicine and Health Sciences
Sleep and Brain Research Unit
PhD student
2018 – 2022

University of Trento, Rovereto, Italy
Centre for Mind/Brain Sciences (CIMeC)
Master of Science with merit (Cognitive Science)
2015 – 2017

University of Salzburg, Salzburg, Austria
Visiting Student (Psychology)
2014 – 2015

The Nicolaus Copernicus University, Torun, Poland
Bachelor of Science (Cognitive Science)
2009 – 2014

RESEARCH EXPERIENCE

Postdoctoral Researcher
Feb. 2022 – Present

Research Title: “Non-invasive modulation of the level and content of mental activity during sleep”
Supervisor: Dr Giulio Bernardi

PhD Student
Apr. 2018 – Dec. 2022

Research Title: “The impact of APOE-ε polymorphism on the interaction between sleep, circadian rhythmicity and spatial navigation in healthy elderly people”

Supervisors: Dr Alpar Lazar and Professor Michael Hornberger

Postgraduate intern
Jan. 2018 – Mar. 2018

Research area: closed-loop stimulation

The Sleep Laboratory at the Department of Psychology, Brain & Cognition, University of Amsterdam, The Netherlands

Supervisor: Dr Lucia M. Talamini

International mobility for thesis research abroad

July 2017 – Sep. 2017

Laboratory for Sleep, Cognition and Consciousness Research, University of Salzburg, Salzburg, Austria

Project Title: “Neural oscillations underlying the processing of emotional and self-relevant auditory stimuli during wakefulness and light sleep. MEG study. “

Supervisors: Prof. Dr Manuel Schabus & Dr Daniel Adams & Dr Christine Blume

Erasmus+ Intern

Sep. 2016 – Feb. 2017

Department of Sleep Medicine at the Royal Infirmary of Edinburgh University of Edinburgh, UK

Supervisor: Dr Renata Riha

Student Research Assistant

Dec. 2015 – Feb. 2016

University of Trento, Rovereto, Italy Centre for Mind/Brain Sciences (CIMeC)

Project Title: “Investigating visual attention in a compound visual search task with multi-modal EEG-fMRI”

Supervisors: Prof. Dr Clayton Hickey & Dr Christina Lavallee

Research Assistant

Jan. 2015 – Aug. 2015

University of Salzburg, Salzburg, Austria Laboratory for Sleep, Cognition and Consciousness Research

Project Title: “The role of memory strength for processes of sleep-associated memory consolidation”

Supervisors: Prof. Dr Manuel Schabus & Dr Dominik Heib

Erasmus+ Intern

Sept. 2014 – Apr. 2015

University of Salzburg, Salzburg, Austria, Laboratory for Sleep, Cognition and Consciousness Research

Supervisor: Prof. Dr Manuel Schabus

AWARDS

- European Sleep Research Society (ESRS) – A travel grant based on the scientific quality of the abstract – Sleep Europe 2022, Athens, Greece (2022)
- European Sleep Research Society (ESRS) Travel Grant 2022 – Meeting and Courses - Sleep Europe 2022, Athens, Greece (2022)
- Keystone Symposia - a scholarship to attend eSymposium ‘Sleep & Circadian Rhythms: Pillars of Health (2021)
- European Sleep Research Society (ESRS) Travel Grant for Early Career Researchers (2020)
- European Sleep Research Society (ESRS) Meeting and Courses Fellowship - ESRS Science School “Sleep and Aging”, Frejus, France (2019)
- Merit Award for remarkable results at the end of the Degree in Cognitive Science, track Cognitive Neuroscience at the University of Trento (2019)

SCHOLARSHIPS

- International mobility for thesis research abroad - University of Salzburg (2017)
- Erasmus+ Internship - University of Edinburgh (2016)
- Erasmus+ Internship - University of Salzburg (2015)
- Erasmus Scholarship - University of Salzburg (2014)

COMPUTER SKILLS

- programming in R (data manipulation and statistical analysis)
- using Python for sleep and actigraphy analysis (Sleep, YASA, pyActigraphy packages)
- experience with MATLAB including Psychtoolbox, EEGLab and FieldTrip
- E-Prime (cognitive task design)
- GraphPad Prism 8 (data visualization)

OTHER SKILLS

- electroencephalography (EEG) and polysomnography (PSG) – data collection and analysis
- sleep staging according to the American Academy of Sleep Medicine (AASM) (version 2.6)
- extensive experience with running circadian protocols
- experience with sensory stimulation protocols on brain activity and dream imagery during sleep
- cognitive data collection and analysis
- good communication skills
- Mental Health First Aider (MHFA, England)
- DNA extraction
- APOE genotyping

TEACHING EXPERIENCE

- Tutor – Brilliant Club Charity (Summer Term 2021) – Statistics - The Secret to Living a Long and Happy Life
- Instructor – Brain and Cognition - PSY-6009A-18 (2018) – *a guest seminar about sleep*
- Associate Tutor - Research Design Analysis I - PSY-4001Y-19 (Summer semester 2019)
- Instructor – Brain and Cognition - PSY-6009A-19 (2019) – *a guest seminar about sleep*
- Lecture - PSY4003Y-20 (2020) – *a guest lecture about sleep*

PUBLICATIONS

- Bertolini, L., Elce, V., Michalak, A., Bernardi, G., & Weeds, J. (2023). Automatic Scoring of Dream Reports' Emotional Content with Large Language Models. arXiv preprint arXiv:2302.14828
- Stewart, K., Shakarishvili, N., Michalak, A., Maschauer, E., Jenkins, N., & Riha, R. (2022). *Treating sleep disorders following traumatic brain injury in adults: time for renewed effort?* Sleep Medicine Reviews, 101631. DOI: 10.1016/j.smr.2022.101631

ACKNOWLEDGEMENTS

- Wislowska, M., Klimesch, W., Jensen, O., Blume, C., Schabus, M. (2022). *Sleep-specific processing of auditory stimuli is reflected by alpha and sigma oscillations.* The Journal of Neuroscience, 42(23), 4711–4724. <https://doi.org/10.1523/jneurosci.1889-21.2022>

- Blume, C., Giudice, R., Wislowska, M., Heib, D., Schabus, M. (2018). *Standing sentinel during human sleep: Continued evaluation of environmental stimuli in the absence of consciousness*. *NeuroImage*, 178, 638-648. doi:10.1016/j.neuroimage.2018.05.056

CONFERENCE PRESENTATIONS

- De Cuntis, I., Michalak, A., Battani, A., Pietrini, P., Bottari, D., & Bernardi, G. (2023). Sleep as a model to understand the sensory-deprived brain. *International Journal of Psychophysiology*, 188, 64 (oral presentation)
- B. Webb, R. Dunn, N. Ball, W. Fraser, A. Lazar, A. Michalak, Z. Voysey, J. Tang; *“Circadian/diurnal rhythm profiles of serum and salivary melatonin, cortisol and cortisone determined by liquid chromatography-tandem mass spectrometry (LC-MS/MS)”*; Society for Endocrinology BES 2022, Harrogate, United Kingdom (poster)
- A. Michalak, T. Garcia Vite, Z. Shabana, V. Grove, A. Mann, T. Conway, C. Dietrich, J. Tsigarides, N. Gill, I. Clark, A. Wagner, A.-M. Minihane, E. Mioshi, M. Hornberger, A. Lazar; *“Sleep and circadian rhythmicity in healthy older adults at low and high genetic risk of Alzheimer’s disease: a multi-method research study.”*; Sleep Europe 2022, Athens, Greece (oral presentation)
- A. Lazar, A. Michalak, T. Garcia Vite, Z. Shabana, V. Grove, A. Mann, T. Conway, C. Dietrich, J. Tsigarides, N. Gill, I. Clark, A. Wagner, A.-M. Minihane, E. Mioshi, M. Hornberger; *“Early sleep and circadian markers of Alzheimer’s: The impact of APOE-ε polymorphism on sleep-wake regulation, brain activity and cognition in healthy older adults”*; Sleep Europe 2022, Athens, Greece (oral presentation)
- A. Michalak, Z. Shabana, T. Garcia Vite, V. Grove, A. Mann, T. Conway, C. Dietrich, J. Tsigarides, N. Gill, M. Hornberger, A.S. Lazar; *“Sex differences in the detrimental effect of sleep restriction and the benefits of scheduled short naps on vigilance and cognition in healthy elderly adults.”*; World Sleep Congress 2022, Rome, Italy (poster)
- A. Mann, A. Michalak, Z. Shabana, T. Conway, C. Dietrich, E. Mioshi, V. Grove, I.M. Clark, A.M. Minihane, M. Hornberger, A.S. Lazar; *“Subjective sleep quality is the strongest predictor of mental and physical health independent of chronotype, sleep duration, APOE-ε4 carriership, age, sex, alcohol consumption, and retirement status in healthy older adults”*; World Sleep Congress 2022, Rome, Italy (poster)
- A. Michalak, V. Grove, Z. Shabana, C. Dietrich, E. Mioshi, A.M. Minihane, M. Hornberger, A. Lazar; *“Depressive symptoms and daytime sleepiness are stronger predictors of subjective cognitive decline than objective cognitive performance, APOE genotype and subjective sleep quality in elderly individuals”*; 25th Congress of the European Sleep Research Society (e-poster)
- A. Michalak, V. Grove, Z. Shabana, C. Dietrich, J. Tsigarides, N. Gill, E. Mioshi, A.M. Minihane, M. Hornberger, A. Lazar; *“Sleep restriction effects on object-location-associative-memory performance: a randomized controlled sleep deprivation versus multinas study in healthy elderly at low and high genetic risk of Alzheimer’s”*; 25th Congress of the European Sleep Research Society (oral presentation)
- K. Stewart; N. Shakarishvili; A. Michalak; E.L. Maschauer; N. Jenkins; R.L. Riha; *“Treating sleep disorders following traumatic brain injury in adults: time for renewed effort?”*; 25th Congress of the European Sleep Research Society (e-poster)
- A. Michalak, C. Dietrich, G. Coughlan, V. Grove, Z. Shabana, M. Hornberger, A. Lazar; *„The impact of*

APOE polymorphism on the interaction between sleep, circadian rhythmicity and spatial navigation in healthy elderly people"; Postgraduate Research Conference 2019, University of East Anglia, Norwich, England (oral presentation)

- A. Michalak; *"The nature and significance of early sleep and circadian disturbances for the onset and progression of dementia"*; Postgraduate Education Conference 2018, University of East Anglia, Norwich, England (oral presentation)
- M. Wislowska, C. Blume, A. Michalak, N. Weisz, M. Schabus *"Even the sleeping brain discerns relevant information"*. 2nd Salzburg Mind-Brain Annual Meeting, Salzburg, Austria (poster)
- M. Wislowska, C. Blume, A. Michalak, N. Weisz, M. Schabus; *"The sleeping brain not only monitors the environment but also detects relevant information"*; 24th European Sleep Research Society, Basel, Switzerland (oral presentation)

OTHER PRESENTATIONS and WEBINARS

- Invited panelist for a discussion webinar for the European Sleep Research Society (ESRS) Gender Equality Forum in honor of the UN's Women & Girls in Science Day, February 2023
- A. Michalak; *"Significance of addressing sex bias in elderly adults in sleep and cognitive research."*; NIHR Applied Research Collaboration East of England, Early Career Researcher event, 2022 (oral presentation)

ATTENDED CONFERENCES, SYMPOSIA & WORKSHOPS

- Congress: 26th Congress of the European Sleep Research Society (ESRS), Athens, Greece, September 27th – 30th 2022
- Congress: World Sleep Congress, Rome, Italy, March 14th – 16th 2022
- Conference: Sleep & Circadian Rhythms: Pillars of Health | EK21, KeyStone Symposia – eSymposia, February 22nd 2021
- Congress: 25th Congress of the European Sleep Research Society (ESRS), Online, September 22nd– 24th 2020
- Symposium: 4th Winter symposium 'Sleep, Cognition and Consciousness', Werfenweng, Austria, February 27th – March 1st 2020
- Science School: the European Sleep Research Society (ESRS) Science School "Sleep and Aging", Frejus, France, September 29th – October 4th 2019
- Congress: 24th Congress of the European Sleep Research Society (ESRS), Basel, Switzerland, September 25th– 28th 2018
- Workshop: Human Brain Project (HBP) Curriculum workshop "Entrepreneurship in Neuroscience", Berlin, Germany, July 4th-6th 2018
- Conference: 1st Salzburg Mind-Brain Annual Meeting (SAMBA), Salzburg, Austria, July 12th– 13th 2018, Salzburg, Austria, July 13th – 14th 2017
- Workshop: Human Brain Project (HBP) Curriculum workshop "Neurobiology for non-specialists", Innsbruck, Austria, July 3rd – 5th 2017
- Symposium: 2nd Winter symposium 'Sleep, Cognition and Consciousness', Kaprun, Austria, January 22nd – 25th 2015

SCIENTIFIC COMMUNICATION

- Magazine publication – “Happiness - a word with 787,683,3378 definitions” – article for the Age of Public Health magazine (no. 1 | 10 August 2021)
- Blog post “Loneliness – Silent pandemic” – report for Public Health Pathways charity (Mar 2021)
- Blog post “Neuro-COVID-19: Complications that call for ongoing analysis and research” – report for Public Health Pathways charity (Nov 2020)
- Blog post “Interpreting COVID-19 Dreams” - report for Public Health Pathways charity (Aug 2020)

ACTIVE MEMBERSHIPS

- European Sleep Research Society (ESRS)

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CHARITY WORK

- Elected committee member of the Early Career Researcher Network (ECRN) Sep 2022 – Present
European Sleep Research Society (ESRS) – Sustainability Lead
- Contributing Writer - Public Health Pathways charity Jun 2020 – July