

# Michael Smith

30 September 2021

## EDUCATION

- 2017 **PhD Medical Science**  
University of Gothenburg, Sweden
- 2011 **MSc Environmental Acoustics**  
University of Salford, United Kingdom
- 2006 **BSc (Hons) Audio Technology**  
University of Salford, United Kingdom

## RESEARCH EXPERIENCE

- 2021 – Present **Researcher**  
University of Gothenburg, Gothenburg, Sweden
- 2018 – 2021 **Postdoctoral Researcher**  
University of Pennsylvania, Philadelphia, USA
- 2017 – 2018 **Researcher**  
University of Gothenburg, Gothenburg, Sweden
- 2013 – 2014 **Assistant Researcher**  
Sahlgrenska University Hospital, Gothenburg, Sweden
- 2011 – 2013 **Assistant Researcher**  
University of Gothenburg, Gothenburg, Sweden
- 2011 **Researcher**  
University of Salford, Greater Manchester, UK

## PUBLICATIONS

### Peer-reviewed articles

21. **Smith, M. G.**, Younes, M., Aeschbach, D., Müller, U., Elmenhorst, E.-M. and Basner, M. (2022) “Traffic noise-induced changes in wake propensity measured with the Odds Ratio Product (ORP).” Science of the Total Environment 805: 150191.
20. **Smith, M. G.**, Wusk, G. C., Nasrini, J., Baskin, P., Dinges, D. F., Roma, P. G. and Basner, M. (2021) “Effects of six weeks of chronic sleep restriction with weekend recovery on cognitive performance and wellbeing in high-performing adults.” SLEEP 44(8): zsab051
19. Riedy, S.\*, **Smith, M. G.\***, Rocha, S. and Basner, M. (2021) “Noise as a sleep aid: A systematic review.” Sleep Medicine Reviews 55: 101385. \*Shared first authorship
18. **Smith, M. G.**, Kelley, M. and Basner, M. (2020) “A brief history of spaceflight from 1961 to 2020: An analysis of missions and astronaut demographics.” Acta Astronautica 175: 290-299
17. **Smith, M. G.**, Ögren, M., Thorsson, P., Hussain-Alkhateeb, L., Pedersen, E., Forssén, J., Ageborg Morsing, J. and Persson Waye, K. (2020) “A laboratory study on the effects of wind turbine noise on sleep: Results of the polysomnographic WiTNES study.” SLEEP 42(9): zsa046

16. **Smith, M. G.**, Rocha, S., Witte, M. and Basner, M. (2020) “On the feasibility of measuring physiologic and self-reported sleep disturbance by aircraft noise on a national scale: A pilot study around Atlanta airport.” Science of the Total Environment 718: 137368
15. **Smith, M. G.**, Witte, M., Rocha, S. and Basner, M. (2019) “Effectiveness of incentives and follow-up on increasing survey response rates and participation in field studies.” BMC Medical Research Methodology 19: 230
14. Rocha, S.\*, **Smith, M. G.\***, Witte, M. and Basner, M. (2019) “Survey results of a pilot sleep study near Atlanta International Airport.” Int J Environ Res Pub Health 16(22): 4321 \*Shared first authorship
13. **Smith, M. G.**, Ögren, M., Ageborg Morsing, J. and Persson Waye, K. (2019) “Effects of ground-borne noise from railway tunnels on sleep: A polysomnographic study.” Building and Environment 149: 288-296
12. Ageborg Morsing, J., **Smith, M. G.**, Ögren, M., Thorsson, P., Pedersen, E., Forssén, J. and Persson Waye, K. (2018) “Characteristics of wind turbine noise contributing to objective sleep disturbance.” Int J Environ Res Pub Health 15(11): 2573
11. Thorsson, P., Persson Waye, K., Ögren, M., **Smith, M. G.**, Pedersen, E. and Forssén, J. (2019) “Creating sound immission mimicking real-life characteristics from a single wind turbine.” Applied Acoustics 143: 66-73
10. Persson Waye, K., **Smith, M. G.**, Ögren, M., Hussain-Alkhateeb, L., Koopman, A., Woodcock, J., Sharp, C., Peris, E., Waddington, D. and Janssen, S. (2019) “Assessing the exposure-response relationship of sleep disturbance and vibration in field and laboratory settings.” Environmental Pollution 245: 558-567
9. Thorsson, P., Persson Waye, K., Ögren, M., **Smith, M. G.**, Pedersen, E. and Forssén, J. “Low-frequency outdoor-indoor noise level difference for wind turbine assessment.” (2018) J Acoust Soc Am 143(3): EL206-EL211
8. Ögren, M, Gidlöf-Gunnarsson, A., **Smith, M. G.**, Gustavsson, S. and Persson Waye, K. (2017) “Comparison of annoyance from railway noise and railway vibration.” Int J Environ Res Pub Health 14(7): 805
7. **Smith, M. G.**, Croy, I., Ögren, M, Hammar, O., Lindberg, E. and Persson Waye, K. (2017) “Physiological effects of railway vibration and noise on sleep.” J Acoust Soc Am 141(5): 3262-3269
6. Croy, I., **Smith, M. G.**, Gidlöf-Gunnarsson, A. and Persson Waye, K. (2017) “Optimal questions for sleep in epidemiological studies – Comparisons of subjective and objective measures in laboratory and field studies.” Behavioral Sleep Medicine 15(6): 466-482
5. **Smith, M. G.**, Croy, I., Hammar, O. and Persson Waye, K. (2016) “Vibration from freight trains fragments sleep: A polysomnographic study.” Scientific Reports 6: 24717
4. Waddington, D., Woodcock, J., **Smith, M. G.**, Janssen, S. and Persson Waye, K. (2015) “CargoVibes: Human response to vibration due to freight rail traffic.” Int J Rail Transport 3(4): 233-248
3. **Smith, M. G.**, Croy, I. and Persson Waye, K. (2014) “Human sleep and cortical reactivity are influenced by lunar phase.” Current Biology 24(12): R551-R552
2. Croy, I., **Smith, M. G.** and Persson Waye, K. (2013) “Effects of train noise and vibration on human heart rate during sleep: An experimental study.” BMJ Open 3(5): e002655
1. **Smith, M. G.**, Croy, I., Ögren, M. and Persson Waye, K. (2013) “On the influence of freight trains on humans: A laboratory investigation of the impact of nocturnal low frequency vibration and noise on sleep and heart rate.” PLoS ONE 8(2): e55829.

### **Conference proceedings articles**

15. Aasvang, G. M. and **Smith, M. G.** (2021). “Team 5 Noise and sleep – A review of research from 2017-2021.” 13<sup>th</sup> IC BEN Congress on Noise as a Public Health Problem. Stockholm, Sweden.

14. Basner, M., **Smith, M. G.**, Rocha, S. and Witte, M. (2019) "Pilot study on the effects of aircraft noise on sleep around Atlanta International Airport." 23<sup>rd</sup> International Congress on Acoustics. Aachen, Germany.
13. **Smith, M. G.**, Younes, M., Aeschbach, D., Müller, U. and Basner, M. (2019) "Traffic noise and its impact on sleep depth measured by the odds ratio product." 23<sup>rd</sup> International Congress on Acoustics. Aachen, Germany.
12. **Smith, M. G.**, Ögren, M., Ageborg Morsing, J., Jerson, T. and Persson Waye, K. (2018). "The effects on sleep of ground borne noise from trains in tunnels." Euronoise 2018. Hersonissos, Greece.
11. **Smith, M. G.**, Ögren, M., Thorsson, P., Hussain-Alkhateeb, L., Pedersen, E., Forssén, J., Ageborg Morsing, J. and Persson Waye, K. (2017). "Wind turbine noise effects on sleep: The WiTNES study." 12<sup>th</sup> ICBEN Congress on Noise as a Public Health Problem. Zürich, Switzerland.
10. **Smith, M. G.**, Ögren, M., Thorsson, P., Pedersen, E. and Persson Waye, K. (2016). "Physiological effects of wind turbine noise on sleep." 22<sup>nd</sup> International Congress on Acoustics. Buenos Aires, Argentina.
9. Waddington, D., Woodcock, J., Peris, E., Sharp, C., Sica, G., Moorhouse, A., Persson Waye, K., **Smith, M. G.**, Croy, I., Hammar, O., Ögren, M., Janssen, S., Koopman, A., Vos, H., Groll, W. and Wiśniewska, K. (2015). "Cargovibes: Human response to vibration due to freight rail traffic." 22<sup>nd</sup> International Congress on Sound and Vibration. Florence, Italy.
8. Ögren, M., **Smith, M. G.** and Persson Waye, K. (2015). "Comparison of annoyance from railway noise and railway vibration." Euronoise 2015. Maastricht, The Netherlands.
7. **Smith, M. G.**, Ögren, M., Hammar, O. and Persson Waye, K. (2015). "Physiological reaction thresholds to vibration during sleep." Euronoise 2015. Maastricht, The Netherlands.
6. **Smith, M. G.**, Croy, I., Ögren, M. Hammar, O. and Persson Waye, K. (2014). "Freight trains, nocturnal vibration and noise, and their physiological effects during sleep." 11<sup>th</sup> ICBEN Congress on Noise as a Public Health Problem. Nara, Japan.
5. Persson Waye, K., **Smith, M. G.**, Ögren, M. and Croy, I. (2014). "The impact of railway freight with regard to vibration level, noise and number of trains on sleep." 11<sup>th</sup> ICBEN Congress on Noise as a Public Health Problem. Nara, Japan.
4. Persson Waye, K., Janssen, S., Waddington, D., Groll, W., Croy, I., Hammar, O., Koopman, A., Moorhouse, A., Peris, E., Sharp, C., Sica, G., **Smith, M. G.**, Vos, H., Woodcock, J. and Ögren, M. (2014). "Rail freight vibration impacts sleep and community response: An overview of CargoVibes." 11<sup>th</sup> ICBEN Congress on Noise as a Public Health Problem. Nara, Japan.
3. **Smith, M. G.**, Croy, I., Hammar, O. and Persson Waye, K. (2013) "Noise sensitivity impacts the evaluation of sleep due to vibration and noise from freight trains." Internoise 2013. Innsbruck, Austria
2. **Smith, M. G.**, Croy, I., Hammar, O., Ögren, M. and Persson Waye, K. (2013) "Nocturnal vibration and noise from freight trains impacts sleep." Proceedings of Meetings on Acoustics, 19: 040114
1. **Smith, M. G.**, Ögren, M. and Persson Waye, K. (2012) "Vibration and noise induced sleep disturbance from trains – The importance of vibration direction." Proceedings of Meetings on Acoustics, 15: 040001

### **Abstracts with presentations**

26. **Smith, M. G.**, Younes, M., Aeschbach, D., Müller, U. and Basner, M. (2021) "Effects of chronotype, noise sensitivity and spindle density on traffic noise-induced changes of sleep depth and stability" 13<sup>th</sup> ICBEN Congress on Noise as a Public Health Problem: 14-17 June 2021
25. Basner, M., **Smith, M.**, Casario, K. and Riedy, S. (2021) "Study design and power calculations for a national study on the effects of aircraft noise on sleep around 77 airports in the United States" 13<sup>th</sup> ICBEN Congress on Noise as a Public Health Problem: 14-17 June 2021

24. **Smith, M. G.**, Younes, M., Aeschbach, D., Elmenhorst, E.-M., Müller, U. and Basner, M. (2021) “A novel measure of sleep depth and sleep fragmentation by noise: The Odds Ratio Product”, Swedish Sleep Research Society (SFSS) Annual Congress: 21-23 April 2021
23. Basner, M., Dinges, D. F., Stahn, A., Nasrini, J., Hermosillo, E., Ecker, A. J., **Smith, M.**, Johannes, B., Healey, B., van den Berg, F. P., Gunga, H. C., Pattyn, N., Moore, T. M., Roalf, D. and Gur, R. C. (2021) “Changes in crew cohesion and habitat use during two 1-year Antarctic winter-over missions.” 23<sup>rd</sup> International Academy of Astronautics (IAA) Humans in Space Symposium: 5-8 April 2021
22. **Smith, M. G.**, Kelley, M. and Basner, M. (2021) “A brief history of spaceflight: An analysis of crewed missions and astronaut demographics from 1961 to 2020 ” NASA Human Research Program Investigator’s Workshop: 1-4 February 2021
21. Basner, M., Dinges, D. F., Stahn, A. C., Cordoza, M., **Smith, M. G.**, Jones, C. W., Williams, E., Ryder, V., Aeschbach, D., Tu, D. and Shou, H. (2021) “Advanced algorithms for the prediction of adverse cognitive and behavioral Conditions in Space.” NASA Human Research Program Investigator’s Workshop: 1-4 February 2021
20. Basner, M., Stahn, A., Dinges, D. F., **Smith, M. G.**, Ecker, A. J., Howard, K., Roma, P. G., Moore, T. M., Roalf, D. and Gur, R. C. (2021) “ Temporal nature of cognitive and visuospatial brain domain changes during long-duration low-Earth orbit missions: Neurostructural and cognitive changes (Project A).” NASA Human Research Program Investigator’s Workshop: 1-4 February 2021
19. **Smith, M. G.**, Wusk, G. C., Nasrini, J., Baskin, P., Dinges, D. F., Roma, P. G. and Basner, M. (2021) “Six weeks of chronic partial sleep restriction in a spaceflight analog induces deficits in cognitive performance.” University of Pennsylvania 19<sup>th</sup> Annual Postdoctoral Research Council Symposium: 28-29 January 2021
18. Younes, M., Kuna, S. T., Pack, A. I. Schweitzer, P. K., Walsh, J. K., **Smith, M. G.**, Basner, M. and Aeschbach, D. (2020) “Correlation between sleep depth in the right and left cerebral hemispheres following sleep deprivation, restriction or noise exposure.” SLEEP 2020: 27-30 August 2020
17. Casario, K., Howard, K., **Smith, M. G.**, Rocha, S., Witte, M. and Basner, M. (2020) “Effects of nocturnal aircraft noise on self-reported sleep.” SLEEP 2020: 27-30 August 2020
16. **Smith, M. G.**, Wusk, G. C., Nasrini, J., Dinges, D. F., Roma, P. G. and Basner, M. (2020) “Effects of chronic partial sleep restriction in isolation and confinement on cognitive performance.” NASA Human Research Program Investigator’s Workshop: 27-30 January 2020
15. Basner, M., Stahn, A., Dinges, D. F., **Smith, M.**, Ecker, A. J., Howard, K., Roma, P., Arias, D., Moore, T. M., Roalf, D. and Gur, R. C. (2020) “Temporal nature of cognitive and visuospatial brain domain changes during long-duration low-Earth orbit missions: Neurostructural and cognitive changes (Project A).” NASA Human Research Program Investigator’s Workshop: 27-30 January 2020
14. Basner, M., Dinges, D. F., Stahn, A., **Smith, M.**, Jones, C. W., Romoser, A., Williams, E., Ryder, V., Aeschbach, D., Tu, D. and Shou, H. (2020) “Advanced algorithms for the prediction of adverse cognitive and behavioral conditions in space.” NASA Human Research Program Investigator’s Workshop: 27-30 January 2020
13. Basner, M., Dinges, D. F., Stahn, A., Nasrini, J., Hermosillo, E., Ecker, A. J., **Smith, M.**, Johannes, B., Healey, B., van den Berg, F. P., Gunga, H. C., Pattyn, N., Moore, T. M., Roalf, D. and Gur, R. C. (2020) “Changes in crew cohesion and habitat use during two 1-year Antarctic winter-over missions.” NASA Human Research Program Investigator’s Workshop: 27-30 January 2020
12. Basner, M., Johannes, B., Dinges, D. F., Stahn, A., Nasrini, J., Hermosillo, E., Ecker, A. J., **Smith, M.**, Gunga, H. C., van den Berg, F. P., Healey, B., Moore, T. M., Roalf, D. and Gur, R. C. (2019) “Changes in sleep-wake rhythms and crew cohesion during two 1-year Antarctic winter-over missions.” 70<sup>th</sup> International Astronautical Congress: 21-25 October 2019

11. **Smith, M. G.**, Younes, M., Aeschbach, D., Müller, U. and Basner, M. (2019) “Planes, trains and automobiles: Traffic noise and dynamic changes in sleep measured by odds ratio product”, University of Pennsylvania 18th Biomedical Postdoc Research Symposium: 11 October 2019
10. **Smith, M. G.**, Younes, M., Aeschbach, D., Müller, U. and Basner, M. (2019) “Planes, trains and automobiles: Traffic noise and dynamic changes in sleep measured by odds ratio product”, Johns Hopkins University 5<sup>th</sup> Annual Sleep and Circadian Research Day: 24 June 2019
9. **Smith, M. G.**, Rocha, S., Witte, M. and Basner, M. (2019) “Self-reported sleep disturbance by aircraft noise around Atlanta airport.” SLEEP 2019: 8-12 June 2019
8. **Smith, M. G.**, Younes, M., Aeschbach, D., Müller, U. and Basner, M. (2019) “Planes, trains and automobiles: Traffic noise and its impact on sleep depth measured by odds ratio product.” SLEEP 2019: 8-12 June 2019
7. **Smith, M. G.**, Younes, M., Aeschbach, D., Müller, U. and Basner, M. (2019) “Planes, trains and automobiles: Traffic noise and its impact on sleep depth measured by odds ratio product.” University of Pennsylvania Center for Sleep and Circadian Neurobiology Annual Research Retreat: 15 May 2019
6. Basner, M., Dinges, D. F., Stahn, A., Nasrini, J., Hermosillo, E., Ecker, A. J., **Smith, M.**, Johannes, B., Healey, B., van den Berg, F. P., Gunga, H. C., Pattyn, N., Moore, T. M., Roalf, D. and Gur, R. C. (2019) “Changes in cognitive performance, sleep and autonomic functions during a 1-year Antarctic winter-over mission.” NASA Human Research Program Investigator’s Workshop: 22-25 January 2019
5. Persson Waye, K., Janssen, S., **Smith, M. G.**, Ögren, M., Hussain-Alkhateeb, L., Koopman, A., Woodcock, J., Sharp, C., Peris, E. and Waddington, D. (2017) “On the possibility of using field and laboratory sleep disturbance due to vibration to derive a common dose response relationship.” 12<sup>th</sup> ICBEN Congress on Noise as a Public Health Problem: 18-22 June 2017
4. **Smith, M. G.**, Ögren, M., Ageborg Morsing, J., and Persson Waye, K. (2016) “Noise from wind turbines and sleep.” 5<sup>th</sup> Nordic Workshop on Noise and Health: 26-27 September 2016
3. **Smith, M. G.**, Ögren, M. and Persson Waye, K. (2016) “Effects of vibration and noise from railway freight on sleep.” University of Oxford Chronobiology and Sleep Medicine Summer School: 24-30 July 2016
2. **Smith, M. G.**, Croy, I. and Persson Waye, K. (2015) “The lunar cycle: A moderator for effects of environmental noise and vibration on sleep?” 16<sup>th</sup> Nordic Sleep Conference, 6-8 May 2015
1. **Smith, M. G.**, Croy, I., Hammar, O., and Persson Waye, K. “Vibration, noise and their interacting contributions towards sleep disturbance.” 167<sup>th</sup> Meeting of the Acoustical Society of America, 5-9 May 2014

## Reports

8. Basner, M., **Smith, M.**, Rocha, S., Witte, M. and Casario, K. (2020) “Pilot study on aircraft noise and sleep disturbance. Final report.” ASCENT Project Number 017, FAA Center of Excellence for Alternative Jet Fuels & Environment, Washington State University (Pullman, WA)
7. Basner, M., Gur, R. C., Dinges, D. F., Moore, T. M., Roalf, D., Ruparel, K., Bilker, W., Billelo, M., **Smith, M.**, Johannes, B., Gerlach, D., Stahn, A. C., Gunga, H.-C., Melzer, T., Taylor, B., Healey, B., van den Berg, F. and Mollicone, D. (2019) “Neurostructural, cognitive, and physiologic changes during a 1-year Antarctic winter-over mission. Final report on original project.” NASA Project NNX14AM81G
6. Persson Waye, P., **Smith, M. G.** and Ögren, M. (2017) “Health effects of low frequency noise indoors.” In Swedish, original title “Hälsopåverkan av lågfrekvent buller inomhus.” Report nr 2017:3. ISBN 978-91-86863-10-4, University of Gothenburg (Gothenburg).
5. **Smith, M. G.**, Ögren, M. and Persson Waye, P. (2015) “Biological reaction thresholds to vibration during sleep.” Report nr 2015:2. ISBN 978-91-86863-08-1, University of Gothenburg (Gothenburg).

4. **Smith, M. G.**, Ögren, M. and Persson Waye, K. (2014) “Comparison of physiological responses to noise and vibration exposure.” In Swedish, original title “Jämförelse av fysiologisk respons vid exponering för buller eller vibrationer.” Rapport nr 2014:2. ISBN 978-91-86863-06-7, University of Gothenburg (Gothenburg).
3. Persson Waye, K., **Smith, M. G.**, Croy, I., Hammar, O. and Ögren, M. (2013) “Attenuation of ground-borne vibration affecting residents near freight railway lines: Final report of the results of the sleep disturbance study.” FP7-266248: D1.4.1
2. Persson Waye, K., **Smith, M. G.**, Croy, I. and Ögren, M. (2012) “Attenuation of ground-borne vibration affecting residents near freight railway lines: Preliminary report on sleep disturbance study.” FP7-266248: D1.3
1. Koziel, Z., **Smith, M. G.**, Sica, G., Woodcock, J., Peris, E., Moorhouse, A. and Waddington, D. (2011) “Human Response to Vibration in Residential Environments” (NANR209), *Technical Report 4: Calculation of Noise Exposure*, Defra (London)

## **AWARDS AND HONORS**

- 2020 Editor’s Choice, paper published in September 2020 issue of SLEEP journal: “A laboratory study on the effects of wind turbine noise on sleep: Results of the polysomnographic WiTNES study”
- 2019 Best research oral presentation: clinical track, Johns Hopkins University 5<sup>th</sup> Annual Sleep and Circadian Research Day
- 2018 Best Paper and Presentation Award, European Acoustics Association
- 2016 Adlerbertska Foundation scholarship
- 2014 Young Scientist Award, International Commission on the Biological Effects of Noise
- 2013 & 2014 Sixten Gemzéus scholarship

## **GRANTS AND FELLOWSHIPS**

### **Research funding**

- 2021-2024 “Low particle emissions and low noise tyres (LEON-T)”, EU Horizon 2020: **3,998,857 EUR** (#955387), Co-Principal Investigator
- 2021-2022 “Biological and cognitive consequences of noise-induced sleep disruption”, Sahlgrenska Academy International Starting Grant 2020: **1,000,000 SEK**, Principal Investigator
- 2020-2021 “WHO guidelines – Systematic evidence review on self-reported sleep disturbance. An update”, UK Department for Environment, Food and Rural Affairs (DEFRA): **33,444 GBP** (project #30116), Co-Investigator
- 2016-2018 “Sleep disturbance by ground borne noise”, Swedish Transport Administration (Trafikverket): **1,755,233 SEK** (TRV 2015/106913), Co-Investigator
- 2015-2018 “Health effects of vibration from rail traffic”, Swedish Transport Administration (Trafikverket): **3,842,000 SEK** (TRV 2015/5979), Co-Investigator
- 2014-2016 “Physiological effects of wind turbine noise on sleep”, Swedish Research Council for Sustainable Development (FORMAS): **4,436,000 SEK** (2013-745), Co-Investigator

- 2014 “Physiological reaction thresholds to vibration during sleep”, Swedish Transport Administration (Trafikverket): **1,468,726 SEK** (TRV 2014/29140), Co-Investigator
- 2014 “Comparison of physiological responses to noise and vibration exposure”, Swedish Transport Administration (Trafikverket): **60,000 SEK**, Co-Investigator

### **Fellowship appointments**

- 2016-2017 Visiting research fellow, School of Business and Law, Manchester Metropolitan University, United Kingdom

## **CONFERENCE ACTIVITY**

### **Organising roles in scientific meetings**

- 2021 Member of the Scientific Committee, 13<sup>th</sup> Congress of the International Commission on Biological Effects of Noise (ICBEN) on Noise as a Public Health Problem, 14-17 June, Stockholm, Sweden
- 2021 Reviewer, 19<sup>th</sup> Annual Biomedical Postdoctoral Research Symposium, 28-29 January, Philadelphia, U.S.A.
- 2019 Session Chair, “Health effects of noise: Sleep”, 23<sup>rd</sup> International Congress on Acoustics, 9-13 September, Aachen, Germany

### **Oral presentations**

- 2021 13<sup>th</sup> ICBEN Congress on Noise as a Public Health Problem, 14-17 June, Virtual (COVID-19 pandemic)
- 2021 Swedish Sleep Research Society Annual Congress, 21-23 April, Virtual (COVID-19 pandemic)
- 2020 NASA 2020 Human Research Program Investigator’s Workshop, 27-30 January, Galveston, TX, U.S.A.
- 2019 23<sup>rd</sup> International Congress on Acoustics, 9-13 September, Aachen, Germany
- 2019 5<sup>th</sup> Annual Sleep and Circadian Research Day, 24 June, Johns Hopkins University, Baltimore, MD, U.S.A.
- 2018 EuroNoise 2018, 27-31 May, Heraklion, Greece
- 2017 12<sup>th</sup> ICBEN Congress on Noise as a Public Health Problem, 18-22 June, Zürich, Switzerland
- 2016 5<sup>th</sup> Nordic Workshop on Noise and Health, 29-27 September, Kuopio, Finland
- 2016 22<sup>nd</sup> International Congress on Acoustics, 5-9 September, Buenos Aires, Argentina
- 2015 EuroNoise 2015, 31 May-3 June, Maastricht, The Netherlands
- 2015 16<sup>th</sup> Nordic Sleep Conference, 6-8 May, Gothenburg, Sweden
- 2014 11<sup>th</sup> ICBEN Congress on Noise as a Public Health Problem, 1-5 June, Nara, Japan
- 2014 167<sup>th</sup> Meeting of the Acoustical Society of America. 5-9 May, Providence, RI, U.S.A.
- 2013 21<sup>st</sup> International Congress on Acoustics, 2-7 June, Montreal, Canada
- 2012 Acoustics 2012, 13-18 May, Hong Kong

### **Poster presentations**

- 2021 NASA 2021 Human Research Program Investigator’s Workshop, 1-4 February, Virtual (COVID-19 pandemic)
- 2021 University of Pennsylvania 19<sup>th</sup> Annual Postdoctoral Research Council Symposium, 28-29 January, Virtual (COVID-19 pandemic)
- 2019 Center for Sleep and Circadian Neurobiology Annual Research Retreat, 15 May, University of Pennsylvania, Philadelphia, PA, U.S.A
- 2019 SLEEP 2019, 08-12 June, San Antonio, TX, U.S.A.
- 2014 11<sup>th</sup> ICBEN Congress on Noise as a Public Health Problem, 1-5 June, Nara, Japan

## **Conference attendance without presentations**

- 2020 71<sup>st</sup> International Astronautical Congress, 12-14 October, Virtual (COVID-19 pandemic)
- 2020 25<sup>th</sup> Congress of the European Sleep Research Society, 22-24 September, Virtual (COVID-19 pandemic)
- 2015 Wind Turbine Noise 2015, 20-23 April, Glasgow, United Kingdom

## **TEACHING EXPERIENCE**

### **Major academic and clinical teaching responsibilities**

- 19. Lecturer, “Environmental contributors to sleep health”, residents and postgraduate students, Sleep and Public Health Course (330.666.11), Virtual Summer Institute in Mental Health Research, Johns Hopkins University, USA, 17<sup>th</sup> June 2021
- 18. Mentor, Aircraft noise effects on sleep, research assistant (Kia Howard), Unit for Experimental Psychiatry, Division of Sleep and Chronobiology, Department of Psychiatry, Perelman School of Medicine at the University of Pennsylvania, 2019-2021
- 17. Mentor, Aircraft noise effects on sleep, research assistant (Katharine Casario), Unit for Experimental Psychiatry, Division of Sleep and Chronobiology, Department of Psychiatry, Perelman School of Medicine at the University of Pennsylvania, 2019-2021
- 16. Lecturer, “Novel methods for measuring and analyzing the impact of the external environment on sleep”, residents and faculty, Department of Occupational and Environmental Medicine, University of Gothenburg, Sweden, 20<sup>th</sup> September 2019
- 15. Mentor, Aircraft noise effects on sleep, research assistant (Sarah Rocha), Unit for Experimental Psychiatry, Division of Sleep and Chronobiology, Department of Psychiatry, Perelman School of Medicine at the University of Pennsylvania, 2018-2019
- 14. Lecturer, “Noise, decibels and A-weighting”, undergraduate students, Public Health course, Medicine program, Faculty of Medicine, University of Gothenburg, Sweden, 20<sup>th</sup> April 2018
- 13. Lecturer, “Health effects of noise”, undergraduate students, Public Health course, Medicine program, Faculty of Medicine, University of Gothenburg, Sweden, 20<sup>th</sup> April 2018
- 12. Seminar leader, “Inter-professional day on human rights and right to health”, undergraduate students, all programs at the Faculty of Medicine, University of Gothenburg, Sweden, 8<sup>th</sup> February 2018
- 11. Lecturer, “Noise, decibels and A-weighting”, undergraduate students, Public Health course, Medicine program, Faculty of Medicine, University of Gothenburg, Sweden, 17<sup>th</sup> January 2018
- 10. Lecturer, “Neuroeconomics. Environmental exposure and effects on sleep: Current research and policy implications”, postgraduate students, MSc Economics program, School of Business and Law, Manchester Metropolitan University, United Kingdom, 24<sup>th</sup> November 2016
- 9. Lecturer, “Noise, decibels and A-weighting”, undergraduate students, Public Health course, Medicine program, Faculty of Medicine, University of Gothenburg, Sweden, 24<sup>th</sup> August 2016
- 8. Mentor, MSc Sound & Vibration student (Stamatina Kalafata) from Chalmers University of Technology, thesis project: “Sound levels, noise source identification and perceptual analysis in an intensive care unit”, 2014



7. Lecturer, “Noise, vibration and their impact on sleep”, clinicians, Svensk Yrkes- och Miljöhygienisk Förening (SYMF, Swedish Association of Occupational & Environmental Hygiene), 4<sup>th</sup> November 2014
6. External supervisor, high school students from LM Engströms Gymnasium, Gothenburg, Sweden, 2014
5. Lecturer, “Bad vibrations: Environmental vibration, noise, and the effects on sleep”, undergraduate and postgraduate students, Acoustics Research Centre, University of Salford, United Kingdom, 11<sup>th</sup> December 2013
4. External supervisor, high school students (Lisa Berglund & Agnes Andersson) from LM Engströms Gymnasium, Gothenburg, Sweden, 2013
3. Lecturer, “Vibration and noise induced sleep disturbance”, residents and faculty, Department of Occupational and Environmental Medicine, University of Gothenburg, Sweden, 30<sup>th</sup> August 2013
2. Demonstrator, Sound Environment Laboratory, undergraduate students, Audiology program, University of Gothenburg, Sweden, 13<sup>th</sup> November 2012
1. Demonstrator, Sound Environment Laboratory, undergraduate students, Audiology program, University of Gothenburg, Sweden, 31<sup>st</sup> January 2012

### **Lectures by invitation**

- 2021 “Environmental stressors and sleep”, Centre for Healthy Indoor Environments, Lund University, Sweden, 17<sup>th</sup> February
- 2018 “Ground-borne railway noise and sleep”, Trafikverket (Swedish Transport Authority), Gothenburg, Sweden, 24<sup>th</sup> May
- 2018 “Disturbing sound”, Student Work Environment Ombudsmen, University of Gothenburg, Sweden, 25<sup>th</sup> January
- 2014 “Sleep and the moon” International Women’s Club of Gothenburg, Gothenburg, Sweden, 4<sup>th</sup> November
- 2014 “The impact and interactions of vibration and noise on sleep”, Introduction to Research course, Faculty of Medicine, University of Gothenburg, Sweden, 28<sup>th</sup> May
- 2014 “How is sleep affected by vibration and noise from railway transportation?”, CargoVibes International Workshop at the Netherlands Organisation for Applied Scientific Research (TNO), Delft, The Netherlands, 11<sup>th</sup> March
- 2014 “Noise, vibration and their impact on sleep”, Trafikverket (Swedish Transport Authority), Gothenburg, Sweden, 3<sup>rd</sup> December
- 2013 “Vibration and noise induced sleep disturbance”, CargoVibes International Workshop at the University of Salford, United Kingdom, 14<sup>th</sup> May

## **SERVICE TO PROFESSION**

### **Leadership of professional organisations**

2021-present: Chair of the International Commission on the Biological Effects of Noise (ICBEN) Team 5: Effects of noise on sleep

2017-2021: Co-chair of the International Commission on the Biological Effects of Noise (ICBEN) Team 5: Effects of noise on sleep

### **Editorial appointments**

2020-present: Editorial board member, Sleep Health

#### **Ad-hoc peer-reviewer (n=36 manuscripts reviewed for N=23 journals)**

2021-present: Journal of Environmental Psychology  
2021-present: Environmental Research  
2021-present: npj Microgravity  
2021-present: Children  
2020-present: International Archives of Occupational and Environmental Health  
2020-present: Transportation Research Part D: Transport and Environment  
2020-present: BMC Public Health  
2020-present: Applied Acoustics  
2020-present: Sleep Health  
2019-present: Environments  
2019-present: Sleep  
2019-present: Journal of the Acoustical Society of America  
2019-present: Building and Environment  
2018-present: Travel Behaviour and Society  
2018-present: Scientific Reports  
2018-present: International Journal of Environmental Research and Public Health  
2018-present: Journal of Transport and Health  
2016-present: Journal of Sleep Research  
2014-present: Noise and Health  
2014-present: Journal of Biological Rhythms  
2013-present: International Journal of Occupational Medicine and Environmental Health  
2013-present: Journal of Low Frequency Noise, Vibration and Active Control  
2013-2019: Acta Acustica united with Acustica

### **Departmental and university appointments**

2017	Member, Doctoral Student Committee (GUDK), University of Gothenburg
2016-2017	Member, Doctoral Student Council (DoR), University of Gothenburg Sahlgrenska Academy, Sweden
2015-2017	Member, Committee for Third-cycle Education (FUK), University of Gothenburg Sahlgrenska Academy, Sweden
2009-2011	Student representative, Masters-level Acoustics disciplines, University of Salford, United Kingdom

### **Other appointments**

2020-2021	Member, Institute for Translational Medicine and Therapeutics (ITMAT) of the University of Pennsylvania
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### **Memberships in professional and scientific societies**

2018-present: New York Academy of Sciences  
2016-present: European Sleep Research Society  
2016-present: Federation of European Neuroscience Societies  
2015-present: Sleep Research Society  
2015-present: Svenska Akustiska Sällskapet (Swedish Acoustical Society)

2015-present: Svensk Förening för Sömnforskning & Sömnmedicin (SFSS, Swedish Association for Sleep Research & Sleep Medicine)  
2015-present: Society for Research on Biological Rhythms  
2015-present: European Acoustical Association Young Acoustician's Network  
2009-2019: Institute of Acoustics (UK)

### **Other professional activities**

2021 Doctoral thesis examiner, Bastien Lechat, "The impact of sleep fragmentation on health", Adelaide Institute for Sleep Health, Flinders University, Australia

### **PROFESSIONAL QUALIFICATIONS AND CERTIFICATIONS**

2016 Sleep Medicine and Chronobiology Summer School, Sleep and Circadian Neuroscience Institute, University of Oxford, UK

2010 Certificate of Competence in Environmental Noise Measurement, Institute of Acoustics, UK

### **MEDIA APPEARANCES (SELECTION)**

CBC Radio (Canada), 15<sup>th</sup> February 2021, radio interview with Blair Sanderson on white noise machines and sleep

Washington Post (USA), 28<sup>th</sup> January 2021, newspaper interview with Allyson Chiu on study reporting links between sleep time and lunar cycle

De Monitor, KRO-NCRV (Netherlands), 14<sup>th</sup> November 2018, television interview with Teun van de Keuken on effects of railway vibration on sleep

"Varning för buller", Forskning & Framsteg (Sweden), 26<sup>th</sup> September 2016, popular science magazine interview on health effects of environmental noise

De Kennis van Nu, NTR (Netherlands), 12<sup>th</sup> January 2016, popular science television sleep study on effects of noise on sleep, with Elisabeth van Nimwegen

Allas (Sweden), 27<sup>th</sup> November 2014, lifestyle magazine interview on links between the lunar cycle and sleep

BBC Radio 5 Live (UK), July 10<sup>th</sup> 2014, radio interview with Phil Williams on links between the lunar cycle and sleep

P4 Extra, Sveriges Radio (Sweden), July 9<sup>th</sup> 2014, radio interview with Harald Treutiger on links between the lunar cycle and sleep

The Times (UK), 9<sup>th</sup> July 2014, newspaper interview with Hannah Devlin on links between the lunar cycle and sleep

Aktuellt, SVT1 (Sweden), 8<sup>th</sup> July 2014, television interview on links between the lunar cycle and sleep

Rapport, SVT1, (Sweden), 8<sup>th</sup> July 2014, radio interview on links between the lunar cycle and sleep

Västnytt, SVT1 (Sweden), 8<sup>th</sup> February 2013, television interview on effects of railway vibration on sleep

### **LANGUAGES**

English: Native proficiency

Swedish: Limited working proficiency