Arne F. Meyer | Ph.D.

Radboud Excellence Fellow
Donders Institute for Brain, Cognition and Behaviour, Radboud University, Nijmegen, the Netherlands
Honorary Research Fellow
Sainsbury Wellcome Centre for Neural Circuits and Behavior, London, UK

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Education

Ph.D. in Physics — **Oldenburg**
Carl von Ossietzky University Oldenburg — *October 2014*
Magna Cum Laude

M.Sc. in Engineering Physics — **Oldenburg**
Carl von Ossietzky University Oldenburg and Technical University Denmark — *October 2009*
Final grade: 1.3

B.Eng. in Engineering Physics — **Oldenburg**
Carl von Ossietzky University Oldenburg — *September 2007*
Final grade: 1.9

Research Experience

Postdoctoral Researcher — **Nijmegen**
Radboud University — *2019 –*
- Independent Research Fellow working with Prof. Francesco Battaglia

Postdoctoral Researcher — **London**
University College London — *2014 – 2019*
- Advisors: Prof. Maneesh Sahani and Prof. Jennifer Linden
- 2017 – 2019: Co-Investigator (BBSRC; PI: Prof. Jennifer Linden, Co-I: Prof. Maneesh Sahani)

Graduate Student Researcher — **Oldenburg**
Carl von Ossietzky University Oldenburg, Institute of Physics — *2009 – 2014*
- Advisor: Prof. Birger Kollmeier

Research Student — **Oldenburg**
Carl von Ossietzky University Oldenburg, Institute of Physics — *07/2007 – 10/2009*
- DIRAC Project (EU FP6)

Research Student — **Lübeck**
University of Lübeck, Institute for Signal Processing — *07/2006 – 11/2006*
- Advisor: Prof. Alfred Mertins

Fellowships

Radboud Excellence Fellowship — **Nijmegen**
Radboud University, Donders Institute for Brain, Cognition and Behavior — *2019 –*
- Independent research fellow

Neuroscience Training Fellowship — **London**
University College London, Gatsby Computational Neuroscience Unit — *2014 – 2017*
- Training in advanced computational and experimental techniques

Funding

Biotechnology and Biological Sciences Research Council (BBSRC) — **London**
University College London — *2017*
- Co-Investigator (PI: Prof. Jennifer Linden, Co-I: Prof. Maneesh Sahani)
- Total value: 560k GBP

NVIDIA GPU Grant — **London**
University College London — *2019*
- NVIDIA TITAN V Supercomputing GPU (value: 3500 GBP)

Publications

Preprints

Meyer AF*, O'Keefe J, Poort J. Two distinct types of eye-head coupling in freely moving mice. *BioRxiv*, 2020.

Zinnamon FA, Harrison FG, Wenas SS, **Meyer AF**, Liu Q, Wang KH, Linden JF. Hearing loss promotes schizophrenia-relevant brain and behavioral abnormalities in a mouse model of human 22q11.2 Deletion Syndrome. *BioRxiv*, 2019.

Peer-reviewed Journal Articles

Meyer AF*,#, Poort J#, O'Keefe J, Sahani M, Linden JF. A head-mounted camera system integrates detailed behavioral monitoring with electrophysiological recordings in freely moving mice. *Neuron*, 100, 46-60, 2018.

Meyer AF, Williamson RS, Linden JF, Sahani M. Models of Neuronal Stimulus-Response Functions: Elaboration, Estimation, and Evaluation. *Frontiers in Systems Neuroscience*:10, 109, 2017.

Meyer AF*, Diepenbrock JP, Ohl FW, Anemüller J. Temporal variability of spectro-temporal receptive fields in the anesthetized auditory cortex. *Frontiers in Computational Neuroscience*:246, 119–133, 2015.

Meyer AF*, Diepenbrock JP, Ohl FW, Anemüller J. Fast and robust estimation of spectro-temporal receptive fields using stochastic approximations. *Journal of Neuroscience Methods*:246, 119–133., 2015.

Meyer AF*, Diepenbrock JP, Happel MFK, Ohl FW, Anemüller J. Discriminative Learning of Receptive Fields from Responses to Non-Gaussian Stimulus Ensembles. *PLOS ONE*:9, e93062, 2014.

Kollmeier B, Schädler MR, **Meyer AF**, Anemüller J, Meyer BT. Do we need STRFs for cocktail parties? On the relevance of physiologically motivated features for human speech perception derived from automatic speech recognition. *Advances in Experimental Medicine and Biology*:787, 333–341, 2013.

(# equal contribution, * corresponding author)

Peer-Reviewed Conference Articles

[In engineering and machine learning, conferences typically have a higher standing and are more competitive than journals. Conference articles are comparable to regular journal articles (4–10 pages), undergo a full-fledged review process (2–3 independent reviews per paper) and the acceptance rate is 15–50%.]

Sahani M., Bohner G, **Meyer AF***. Score-Matching Estimators For Continuous-Time Point-Process Regression Models. *IEEE 26th International Workshop on Machine Learning for Signal Processing (MLSP)*, 2016.

Meyer AF*, Diepenbrock JP, Ohl FW, Anemüller J. Quantifying neural coding noise in linear threshold models. *6th International IEEE/EMBS Conference on Neural Engineering (NER)*, 2013.

Bach JH#, **Meyer AF**#, McElfresh D, Anemüller J. Automatic classification of audio data using nonlinear neural response models. *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, 2012.

(# equal contribution, * presenting author)

Conference Abstracts (selected)

Meyer AF, Poort J. Action-specific processing in mouse visual cortex. *7th International Caesar Conference*, Bonn, Germany, 2018.

Meyer AF, Poort J, O'Keefe J, Sahani M, Linden JF. Monitoring behavior and neural activity in freely moving mice with head-mounted cameras and implants. *Cosyne*, Denver, USA, 2018.

Dimitriadis G, **Meyer AF**, Neto JP, Nogueira J, Geerts J, Sahani M, Kampff AR. Neural representation of complex auditory stimuli from high-density, distributed, electrophysiology recordings in rats. *Integrated Systems Neuroscience Workshop*, Manchester, UK, 2017.

Meyer AF, Poort J, Sahani M, Linden JF. The relation between eye and head movements and cortical activity in freely moving mice. *Bernstein Conference*, Göttingen, Germany, 2017.

Meyer AF, Linden JF, Sahani M. Local sensory context modulates responses to complex sounds in multiple brain areas along the auditory pathway. *Society for Neuroscience Meeting*, Chicago, USA, 2015.

Meyer AF, Diepenbrock JP, Ohl, FW, Anemüller J. Fast and reliable estimation of non-Gaussian stimulus receptive fields using large-margin classification. Society of Neuroscience Meeting, San Diego, USA, 2013.

Meyer AF, Anemüller J. Robust and efficient receptive field inference from binary responses with stochastic gradient descent. *Physics, Computation, and the Mind: Advances and Challenges at Interfaces*. La Herradura, Spain, 2012.

Talks

Netherlands Institute for Neuroscience **12/2019**
Invited talk *Amsterdam*

Ruhr University Bochum **03/2019**
Invited talk, Institute for Neural Computation *Bochum*

Ludwigs-Maximilians University Munich **01/2018**
Invited talk, Department of Biology *Munich*

Integrative Systems Neuroscience Workshop **09/2017**
"Future Leader" talk *Manchester*

IEEE International Workshop on Machine Learning for Signal Processing **09/2016**
Selected talk *Vietri Sul Mare*

University College London **03/2014**
Invited talk, Gatsby Computational Neuroscience Unit *London*

University of Cambridge **03/2014**
Invited talk, Department of Physiology, Development and Neuroscience *Cambridge (UK)*

Workshop "The active auditory system" **04/2012**
Invited talk *Magdeburg*

Teaching

Lecturer "Neurophysics" **2020**
Radboud University *Nijmegen*

M.Sc. Neuroscience Journal Club (Module ANAT0017) **2019**
University College London *London*

Lecturer "Social and affective behaviors" **2018 – Present**
Sainsbury Wellcome Centre for Neural Circuits and Behavior *London*

Lecturer "Scientific Programming in Python" **2018**
Gatsby Unit/Sainsbury Wellcome Centre for Neural Circuits and Behavior *London*

Teaching assistant "Communication and information theory" **2011**
Carl von Ossietzky University Oldenburg, Institute of Physics *Oldenburg*
Lecturer: Dr. Jörn Anemüller

Mentorship

Sam Suidman, B.Sc. Student, Radboud University Nijmegen	2020
Marios Akritas, PhD Student, University College London	2018/2019
Alex Armstrong, Lab Technician, University College London	2017–2019
Xuehan Zhou, M.Sc. Student, University College London	2016/2017
Radu Ciaota, M.Sc. Student, University College London	2016
Haneen Sadir, M.Sc. Student, University College London	2016
Peter Zatka-Haas, PhD Student, University College London	2015
Judith Buetepage (University of Osnabrück), Summer Student, University Of Oldenburg	2013
Lena Eipert, M.Sc. Student, University Of Oldenburg	2012
Duncan McElfresh (Colorado School of Mines), DAAD Rise Scholarship, University Of Oldenburg	2011

Service

Ad-hoc reviewer **2015 – Present**
PLOS Computational Biology, PLOS ONE, Neuroscience letters, Acta Acoustica

F1000 Associate Faculty Member **2016 – Present**
Evaluation of novel and relevant literature

University College London FLS Program Commitee **2016 – 2019**
Organization of Faculty of Life Sciences (FLS) meetings and events *London*

Bernstein Conference Workshop **2018**
"Internally generated network dynamics: experiment and theory" (together with Prof. A. Sirota, LMU) *Berlin*

Workshop in the SFB/TRR 31 (DFG) **2014**
"Active hearing across the animal kingdom" *Langeoog*

Referees

Prof. Maneesh Sahani
Professor of Theoretical Neuroscience and Machine Learning
University College London

Gatsby Computational Neuroscience Unit
25 Howland Street
London, W1T 4JG

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Prof. Jennifer F. Linden
Professor of Neuroscience
University College London

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Prof. John O'Keefe
Professor of Cognitive Neuroscience and Nobel Laureate in Physiology or Medicine 2014
University College London

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