

2021: CURRICULUM VITAE

PERSONAL INFORMATION

Full Name: Ondracek, Janie Michelle
ORCID: [0000-0002-4570-447X](https://orcid.org/0000-0002-4570-447X)
ResearcherID: [AAA-6135-2021](https://pubs.acs.org/author/AAA-6135-2021)
Nationality: Switzerland and USA
URL: www.ondraceklab.com

EDUCATION

2014: **Doctor of Sciences - ETH Zurich (Physics)**
Institute of Neuroinformatics, ETH Zurich, ZH, Switzerland
PhD Supervisor: Richard Hahnloser

2009: **Masters of Science (Neural Systems and Computation)**
University of Zurich, ZH, Switzerland

2005: **Bachelor of Arts (Neuroscience)**
Magna Cum Laude in Independent Study; *Cum Laude* in Course
Lawrence University, Appleton, Wisconsin, USA

CURRENT POSITION

2018-ongoing: **Junior Group Leader (fixed-term contract)**
Technical University of Munich, Chair of Zoology, Freising, Germany

PREVIOUS POSITIONS

2017-2018: **Postdoctoral Researcher**
Technical University of Munich, Chair of Zoology, Freising, Germany

2013-2017: **SNSF Postdoctoral Research Fellow**
MPI for Brain Research, Frankfurt, Germany

2005-2007: **Research Associate**
Rosalind Franklin University of Medicine and Science, North Chicago, IL, USA

CURRENT RESEARCH PROGRAM

My research investigates sleep-dependent memory consolidation in non-mammalian animal models. I used an interdisciplinary approach that incorporates diverse methods such as:

- **Neurophysiology** to examine brain dynamics during learning and consolidation
- **Behavioral paradigms** to study natural learning
- **Slice electrophysiology** to map large-scale brain dynamics
- **Molecular and genetic tools** to perturb neural circuits in real time
- **Computational tools** to analyze behavior and brain state network dynamics

By diversifying the field of memory research to include alternative animal models and behaviors, we will deepen our existing knowledge about sleep, learning, and memory, and may thereby reveal foundational principles that underlie learning and memory for all animals

RESEARCH FELLOWSHIPS AND AWARDS

- 2021:** **International Emerging Actions (CNRS)**
Technical University of Munich, Freising, Germany
- 2020:** **Bayerisch-Französisches Hochschulzentrum - BayFrance Mobility Fellowship**
Technical University of Munich, Freising, Germany
- 2019:** **Grass Foundation - Independent Investigator Fellowship**
Technical University of Munich, Freising, Germany
- 2019-21:** **Daimler and Benz Foundation - Postdoctoral Scholarship**
Technical University of Munich, Freising, Germany
- 2018-21:** **German Research Foundation (DFG) - Research Grant**
Technical University of Munich, Freising, Germany
- 2013-14:** **Swiss National Science Foundation - Early Postdoc Mobility Fellowship**
ETH Zurich, Zurich, Switzerland
- 2004-05:** **Thomas J. Watson Fellowship**
Lawrence University, Appleton, Wisconsin, USA

PUBLICATIONS (N=10)

1. H. Yeganegi, H. Luksch, **J.M. Ondracek**. (2019). Hippocampal-like network dynamics underlie avian sharp wave-ripples. **bioRxiv**, doi: <http://dx.doi.org/10.1101/825075>.
2. A. Jovalekic, S. Cave-Lopez, A. Canopoli, **J.M. Ondracek**, A. Nager, A.L. Vyssotski, and R.H.R. Hahnloser. (2017). A lightweight feedback-controlled microdrive for chronic neural recordings. **Journal of neural engineering**, 14(2):026006.
3. M. Shein-Idelson*, **J.M. Ondracek***, H.-P. Liaw, S. Reiter, and G. Laurent. (2016). Slow waves, sharp waves, ripples, and REM in sleeping dragons. **Science** (New York, N.Y.), 352 (6285):590.
**authors contributed equally to this work*
4. G. Laurent, J. Fournier, M. Hemberger, C.M. Mller, R. Naumann, **J.M. Ondracek**, L. Pammer, S. Reiter, M. Shein-Idelson, M. A. Tosches, and T. Yamawaki. (2016). "Cortical Evolution: Introduction to the Reptilian Cortex." In G. Buzsaki & Y. Christen. (Eds.), **Micro-, Meso- and Macro-Dynamics of the Brain**, pp 23-33.
5. R. K. Naumann, **J.M. Ondracek***, S. Reiter, M. Shein-Idelson, M. A. Tosches, T. M. Yamawaki, and G. Laurent. (2015). The reptilian brain. **Current Biology**, 25(8):R317-R321.
**alphabetical order, all authors contributed equally*
6. **J.M. Ondracek** and R.H.R. Hahnloser. (2013) "Advances in Understanding the Auditory Brain of Songbirds." In C. Kopppl, G. Manley, A. Popper, & Fay R. (Eds.), **Springer Handbook in Auditory Research: Insights from Comparative Hearing Research**. Volume 49, pp 347-388.
7. **J.M. Ondracek**, I. Willuhn, H. Steiner, and A. R. West. (2010). Interactions between Procedural Learning and Cocaine Exposure Alter Spontaneous and Cortically Evoked Spike Activity in the Dorsal Striatum. **Frontiers in Neuroscience**, 4(847):206.
8. **J.M. Ondracek**, A. Dec, K.E. Hoque, S.A.O. Lim, G. Rasouli, R.P. Indorkar, J. Linardakis, B. Klika, S.J. Mukherji, M. Burnazi, S. Threlfell, S. Sammut, and A.R. West. (2008). Feed-forward excitation of striatal neuron activity by frontal cortical activation of nitric oxide signaling in vivo. **The European journal of neuroscience**, 27(7):1739-54.
9. B.E. Hetzler, **J.M. Ondracek**, and E.A. Becker. (2008). Baclofen does not counteract the acute effects of ethanol on flash-evoked potentials in Long-Evans rats. **The International journal of neuroscience**, 118(11):1558-81.
10. B.E. Hetzler and **J.M. Ondracek**. (2007). Baclofen alters flash-evoked potentials in Long-Evans rats. **Pharmacology, biochemistry, and behavior**, 86(4):727-40.

RESEARCH SUPERVISION

PhD Students (2019-ongoing):	N=1 , Technical University of Munich, Freising, Germany
Bachelor's Students (2019-ongoing):	N=1 , Technical University of Munich, Freising, Germany
Research Internships (2018-ongoing):	N=12 , Technical University of Munich, Freising, Germany
Research Internships (2013-15):	N=7 , MPI for Brain Research, Frankfurt, Germany

Selected Student Projects:

- “Robust sharp wave-ripple detection using neural networks” – S. Burgkart
- “Using DeepLabCut for 3D markerless pose estimation in zebra finches” – P. Villa Fulton
- “Serotonin and parvalbumin immunohistochemistry in the avian brain” – X. Hu
- “Development of a Raspberry Pi-controlled operant-conditioning tool for songbirds” – A. Felderer

TEACHING EXPERIENCE

Academic courses - acting as course coordinator and lecturer (N=4)

2021:	Neuroethology of Predation and Escape, Technical University of Munich
2021:	Rhythms of the Brain, Technical University of Munich
2018-ongoing:	Neuroscience of Vision, Technical University of Munich
2018-ongoing:	Neurobiology of Birds, Technical University of Munich

Academic courses - acting as lecturer (N=7)

2018-ongoing:	Principles of Neurobiology, Technical University of Munich
2018-ongoing:	Sensory Physiology, Technical University of Munich
2017:	Advanced Methods in Neurophysiology, Technical University of Munich
2009-11:	Computational Neuroscience, ETH Zurich
2010-11:	Laboratory Animal Science (Instructor, Avian Section), ETH Zurich
2010:	Neuroscience: From Networks to Systems, ETH Zurich
2009:	Auditory Informatics, ETH Zurich

INSTITUTIONAL RESPONSIBILITIES

2020-ongoing: **Program Mentor:** Master of Science in Neuroengineering (MSNE) program
Department of Electrical and Computer Engineering, Technical University of Munich

Responsibilities: Mentoring 3 students/year to guide course selection, research specialization

REVIEWING ACTIVITIES

2019-ongoing:	Expert Reviewer: Brain Structure and Function
2020-ongoing	Review Editor: Cellular Neurophysiology, Frontiers in Cellular Neuroscience
2020-ongoing	Expert Reviewer: Journal of Neural Engineering
2021-ongoing	Expert Reviewer: Science

[Link to Publons profile](#)

SOCIETY MEMBERSHIP

2018-ongoing:	Bernstein Center for Computational Neuroscience - Munich, Germany
2006-ongoing:	Society for Neuroscience, USA
2010-ongoing:	Federation of European Neuroscience Societies, European Union
2017-ongoing:	German Neuroscience Society, Germany
2017-ongoing:	German Zoological Society, Germany
2010-2012:	Swiss Neuroscience Society, Switzerland

CAREER BREAKS

7.April.2020 - 5.October.2020 Mother protection (Mutterschutz) and parental leave

NATIONAL AND INTERNATIONAL RESEARCH COLLABORATIONS

Name	Affiliation, Country
N. Giret	Neuroscience Paris-Saclay Institute, Université Paris Sud, France
M. Shein-Idelson	Sagol School for Neuroscience, Tel-Aviv University, Israel
M. A. Tosches	Columbia University, Department of Biological Sciences USA
S. Kiessling	ZIEL Institute for Food and Health, TUM School of Life Sciences, Germany
D. Vallentin	Max Planck Institute for Ornithology, Germany
B. Wolfrum	TUM Department of Electrical and Computer Engineering, Germany
J. Gjorgjieva	Computational Neuroscience, TUM School of Life Sciences, Germany

INVITED CONFERENCES AND PRESENTATIONS

Faculty Interviews (N=2)

- 2018 Tenure Track Professor, Neurobiology of Vocal Communication, University of Tübingen
2018 Tenure Track Professor, Digital Health and Behaviour Monitoring, Technical University of Munich

Invited Conference Presentations (N=5)

- 2019: Daimler and Benz Foundation Alumni Meeting, Ladenburg, Germany
Title: The sleeping brain: An evolutionary exploration
- 2019: European Birdsong Meeting, Cappelletti, Italy
Title: Slow waves, sharp waves, and memories
- 2018: Avian Cognitive Neuroscience, Ruhr University Bochum, Bochum, Germany
Title: Sleep, Singing, and Memories: Avian sleep as a model for memory consolidation
- 2018: A Comparative Approach to Cracking Circuit Function II, Janelia Research Campus, Ashburn, USA
Title: Slow waves, sharp waves, and memories: Exploring ancestral sleep in birds and reptiles
- 2017: Neuroethology Satellite Symposium, German Zoological Society, Bielefeld, Germany
Title: Sleep in sauropsida: Exploring the evolutionary origin of sharp wave-ripples

Scientific Colloquiums (N=9)

- 2019: Flash Talk, Marine Biological Laboratory, Woods Hole, USA
2019: Grass Laboratory Trustee Meeting, Woods Hole, USA
2018: Biopsychology Research Colloquium, Ruhr University Bochum, Bochum, Germany
2018: GSN Neurolunch, Ludwig-Maximilians-University Munich, Munich, Germany
2018: Loren Frank Lab, Center for Integrative Neuroscience, UC San Francisco, USA
2018: Life Sciences and Computation Meetup, Technical University Munich, Munich, Germany
2017: Neurolunch Talk, Cortexlab, University College London, London, UK
2016: Georges Lab, University of Canberra, Canberra, Australia
2016: Lizard Lab, Macquarie University, Sydney, Australia

PUBLISHED ABSTRACTS AND POSTERS (N=5/10)

- 2018: **J.M. Ondracek**. "Avian sharp wave-ripples reveal link to ancestral sleep circuits."
Neuroscience Abstract; Program No. 331.17. San Diego, CA, USA.
- 2018: **J.M. Ondracek**, H.A. Schnyder, U. Firzlaff, & H. Luksch.
Auditory integration at the locus of attention: Characterizing auditory responses in the optic tectum. FENS Abstract, Program No: F18-0855, Berlin, Germany.
- 2015: **J.M. Ondracek**, A. Kotowicz, M. Shein-Idelson, & G. Laurent. Analysis of electrophysiological cortical activity during sleep in turtles and lizards. Neuroscience Abstract; Program No: 167.18/V9 Chicago, IL, USA.
- 2012: **J.M. Ondracek** & R.H.R. Hahnloser. Intrinsic noise and correlations in a population of auditory neurons in a songbird. Poster: The Monte Verit Workshop on Music in Neuroscience. Ascona, Switzerland.
- 2012: **J.M. Ondracek** & R.H.R. Hahnloser. Noise correlations in a population of forebrain neurons reveal rich network dynamics. Poster: Swiss Society of Neuroscience Annual Meeting. Zürich, Switzerland.