Curriculum vitae – Dr. rer. nat. Jerome Beetz

M. Jerome Beetz
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Place/Date of Birth: Aschaffenburg/22nd Dec 1988

Academic Employment/Education

Since May 2025	**Emmy Noether Group leader** – University of Würzburg | Germany
2022-2025	**Senior Scientist -** University of Würzburg | Germany | PI: Prof. Dr. Keram Pfeiffer
2017-2022	**Postdoctoral Fellow -** University of Würzburg | Germany | PI: Dr. Basil el Jundi
2014-2017	**PhD –** University of Frankfurt | Germany Supervisor: Prof. Dr. Manfred Kössl (**Grade: Summa cum laude**)
2011-2013	**Master of Interdisciplinary Neuroscience** – University of Frankfurt | Germany Supervisor: Prof. Dr. Uwe Homberg (external master) (**Grade: 1.2**)
2008-2011	**Bachelor in Biology** - University of Marburg | Germany Supervisor: Prof. Dr. Uwe Homberg (**Grade: 1.3**)
2005-2008	Senior classes: Alfred-Delp school, 64807 Dieburg (**Abitur: 1.5**)
2001-2005	Comprehensive school, 64839 Münster
1999-2001	Grammar school, 63741 Aschaffenburg
1995-1999	Elementary school, 63743 Aschaffenburg

Awards & Grants

2025	**Emmy Noether Grant (2, 240, 422€)** | German Research Council (DFG)
2020	**Young Investigator Award** | International Society for Neuroethology
2019	**PostDoc Plus independent research grant (12,500€)** | GSLS | Würzburg
2018	**Travel grant (1,000 AU$)** | International Society for Neuroethology
2018	**Travel grant** | DAAD (German Academic Exchange Service)
2017	**Stipend (8,203 US$)** | Surdna Foundation Scholarship | USA
2017	**Travel grant (3,190€)** | Boeringer Ingelheim Fonds | Germany

Conference contributions

Chair

2018	**Symposium chair** at the International Congress Neuroethology | Brisbane | Australia

Talks

2024	International Congress Neuroethology | Berlin | Germany

2024	Interdisciplinary Navigation Symposium (iNAV) | Merano | Italy
2023	International conference on invertebrate vision (ICIV) | Sweden
2022	Insect Central complex meeting | Janelia | USA
2022	International Congress Neuroethology | Lisbon | Portugal
2022	Seminar Series of the Arthropod Neuroscience Network (ANN)
2021	Meeting of the German Zoological Society (DZG)
2021	Seminar Series of the Arthropod Neuroscience Network (ANN)
2019	International conference on invertebrate vision (ICIV) | Sweden
2018	International Congress Neuroethology | Brisbane | Australia
2018	International animal biosonar symposium | Brisbane | Australia
2018	Meeting of the German bat researchers | Germany
2017	Meeting of the German bat researchers | Germany
2015	Meeting of the German bat researchers | Germany
2015	Meeting of the German Neuroscience Society | Göttingen | Germany

Posters

2025	Gordon Research Conference | Lucca | Italy
2024	Bat Satellite Meeting | Berlin | Germany
2019	Meeting of the German Neuroscience Society | Göttingen | Germany
2017	Meeting of the German Neuroscience Society | Göttingen | Germany
2016	Meeting of the Rhein-Main Neuroscience network | Oberwesel | Germany
2016	International Congress Neuroethology | Montevideo | Uruguay
2013	Meeting of the German Neuroscience Society | Göttingen | Germany

Invited Talks

2023	University of Bielefeld | Bielefeld | Germany | Host: Olivier Bertrand
2022	MPI for Brain Research | Frankfurt | Germany | Host: Elena Kutsarova
2022	CNRS | Toulouse | France | Host: Martin Giurfa
2019	University of Marburg | Marburg | Germany | Host: Uwe Homberg
2017	MPI for Brain Research | Frankfurt | Germany | Host: Hiroshi Ito,
2013	University of Würzburg | Würzburg | Germany | Host: Wolfgang Rössler
2013	Lund University | Vision Group | Lund | Sweden | Host: Stanley Heinze/Eric Warrant

Stays Abroad

2018	**Texas A&M University** | College Station | USA – Guest Researcher
2017	**FENS Winter school** | University center Obergurgl | Austria
2017	**Marine Biological Laboratory** | Woods Hole | USA – NS&B course

Teaching & Supervision

since 2023	Human Biolgy, Lecture | University of Würzburg

since 2022	Neurob., Behav. Physiol., and Ani.Ecology Lecture | University of Würzburg
since 2022	Experimental Sociobiology Seminar | University of Würzburg
since 2022	Integrative Behavioral Biology I | University of Würzburg
since 2019	Integrative Behavioral Biology II Practical course | University of Würzburg
since 2012	supervision of 8 Bachelor and 2 Master theses

Editorial Commitments

2022	Guest Editor of the Special Issue: "Naturalistic Neuroscience-Towards a Full Cycle from Lab to Field" for the Frontiers of Neural Circuits
since 2021	Advisory Board of the Ethology & Neuroethology section for the Journal of Molecular Psychology: Brain, Behavior, and Society (F1000 Research)

Memberships

since 2021	Member of the Germany Zoological Society (DZG)
since 2016	Member of the International Society for Neuroethology (ISN)
since 2013	Member of the German Neuroscience Society (NWG)

Publication List

2024

A perspective on neuroethology: what the past teaches us about the future of neuroethology. Beetz MJ J Comp Physiol A 210:325-346.

2023

Monarch butterflies memorize the spatial location of a food source. Konnerth M, Foster JJ, el Jundi B, Spaethe J, Beetz MJ Proc R Soc B. 290:20231574.

Neural representation of goal direction in the monarch butterfly brain. Beetz MJ, Kraus C, el Jundi B Nature communications 2023, 5859.

The neurobiology of the Monarch butterfly compass. Beetz MJ, el Jundi B Curr Opin in Insect Science 2023, 60:101109

The influence of stimulus history on directional coding in the monarch butterfly brain. Beetz MJ, el Jundi B J Comp Physiol A 2023, 209:663-677.

2022

Flight-induced compass representation in the monarch butterfly heading network. Beetz MJ, Kraus C, Franzke M, Dreyer D, Strube-Bloss MF, Rössler W, Warrant EJ, Merlin C, el Jundi B 2022, Curr Biol 32, 338–349.

Neural processing of naturalistic echolocation signals in bats. Beetz MJ, Hechavarría JC. Front Neural Circuits. 2022; 16: 899370.

Weighting of celestial and terrestrial cues in the monarch butterfly central complex. Thi Nguyen TA, Beetz MJ, Merlin C, Pfeiffer K., el Jundi B. Front. Neural Circuits. 2022; 16: 862279.

2021

The frugivorous bat *Carollia perspicillata* dynamically changes echolocation parameters in response to acoustic playback. Beetz MJ, Kössl M, Hechavarría JC. J Exp Biol. 2021, 224:jeb234245

Sun compass neurons are tuned to migratory orientation in monarch butterflies. Thi Nguyen TA, Beetz MJ, Merlin C, el Jundi B. Proc Biol Sci. 2021, 288:20202988

2020

Anatomical and ultrastructural analysis of the posterior optic tubercle in the locust *Schistocerca gregaria*. Held M, Le K, Pegel U, Dersch F, Beetz MJ, Pfeiffer K, Homberg U. Arthropod Struct Dev. 2020, 58:100971

Spatial orientation based on multiple visual cues in non-migratory monarch butterflies. Franzke M, Kraus C, Dreyer D, Pfeiffer K, Beetz MJ, Stöckl AL, Foster JJ, Warrant EJ, el Jundi B. J Exp Biol. 2020, 223:jeb223800

Bats distress vocalizations carry fast amplitude modulations that could represent an acoustic correlate of roughness. Hechavarría JC, Beetz MJ, García-Rosales F, Kössl M. Sci Rep. 2020,10:1-20

2019

Adaptations in the call emission pattern of frugivorous bats when orienting under challenging conditions. Beetz MJ, Kössl M, Hechavarría JC. J Comp Physiol A 2019, 205:457-467.

2018

Neuronal coding of multiscale temporal features in communication sequences within the bat auditory cortex. García-Rosales F, Beetz MJ, Cabral-Calderin Y, Kössl M, Hechavarría JC. Commun Biol 2018, 1:200

Low frequency spike-field coherence is a fingerprint of periodicity coding in the auditory cortex. García-Rosales F, Martin LM, Beetz MJ, Cabral-Calderin Y, Kössl M, Hechavarría JC. iScience 2018, 9:47-62

Insect Orientation: Stay on Course with the Sun. Beetz MJ, El Jundi B. Curr Biol. 2018 28:R933-R936.

Robustness of cortical and subcortical processing in the presence of natural masking sounds. Beetz MJ, García-Rosales F, Kössl M, Hechavarría JC. Sci Rep. 2018 8:6863.

2017

Processing of natural echolocation sequences in the inferior colliculus of Seba's fruit eating bat, *Carollia perspicillata*. Beetz MJ, Kordes S, García-Rosales F, Kössl M, Hechavarría JC. eNeuro 2017 4:ENEURO.0314-17.

Processing of temporally patterned sounds in the auditory cortex of Seba's short-tailed bat, *Carollia perspicillata*. Martin LM, García-Rosales F, Beetz MJ, Hechavarría JC. Eur J Neurosci. 2017, 46:2365-2379.

Activity monitoring of bats in a laboratory flight tunnel using a 24 GHz FMCW radar system. Moll J, Malzer M, Krozer V, Pozdniakov D, Salman R, Beetz MJ, Kössl M. 11th European Conference on Antennas and Propagation (EuCAP) 2017

2016

Vocal sequences suppress spiking in the bat auditory cortex while evoking concomitant steady-state local field potentials. Hechavarría JC, Beetz MJ, Macias S, Kössl M. Sci Rep. 2016, 6:39226.

Cortical neurons of bats respond best to echoes from nearest targets when listening to natural biosonar multi-echo streams.
Beetz MJ, Hechavarría JC, Kössl M, Sci Rep. 2016, 6:35991.

Neurons in the brain of the desert locust *Schistocerca gregaria* sensitive to polarized light at low stimulus elevations. Beetz MJ, Pfeiffer K, Homberg U. J Comp Physiol A. 2016, 202:759-781.

Temporal tuning in the bat auditory cortex is sharper when studied with natural echolocation sequences. Beetz MJ, Hechavarría JC, Kössl M, Sci Rep. 2016, 6:29102.

Distress vocalization sequences broadcasted by bats carry redundant information. Hechavarría JC, Beetz MJ, Macias S, Kössl M. J Comp Physiol A 2016, 202:503-15.

Radar-based detection of bats: Experiments in a laboratory flight tunnel. Moll J, Malzer M, Scholz N, Krozer V, Pozdniakov D, Salman R, Zimmermann R, Hechavarría JC, Beetz MJ, Kössl M. 10th European Conference on Antennas and Propagation (EuCAP) 2016

2015

Topographic organization and possible function of the posterior optic tubercles in the brain of the desert locust *Schistocerca gregaria*. Beetz MJ, El Jundi B, Heinze S, Homberg U. J Comp Neurol. 2015, 523:1589-607.