Curriculum Vitae

Personal information

Name: Olivia Andrea Masseck

Date and place of birth: 19.02.1981, Soest, Deutschland

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Current positions

since 10/2018	**Professor** „Synthetische Biologie“ University Bremen
since 01/2021	**Reviewer** Nature Methods
since 10/2021	**Chairwoman research** funding committee for natural sciences and engineering at the Universiyt Bremen Universität Bremen
since 05/2021	**Vice Chairwoman** Steering group „Understanding animal experiments “
since 06/2020	**Member high** profile area Minds, Media, Machines University of Bremen
since 03/2020	**HRK-representative** Steering group „Understanding animal experiments “
since 08/2019	**Review Editor** Frontiers in Behavioral Neuroscience – Learning and Memory
since 2019	**Member commission for animal experiments** of senatorial authority of the free and hanseatic city Bremen
since 2019	**Organizer lecture series** „MindTalks“
since 07/2018	**Board member** Collaborative Research Center CRC 874 „Integration and Representation of sensory processes”
since 2017	**Reviewer** DFG

Previous positions

05/2016 – 10/2018	**Junior professor** “Advanced Fluorescence Microscopy”, Ruhr-University Bochum
06/2016 – 10/2018	**Faculty member** nternational Graduate School of Neuroscience (IGSN), Ruhr-University Bochum
09/2015 – 10/2018	**Member** Early Career Researchers Board of the Research School Ruhr -university Bochum
04/2014 – 10/2018	**Principal Investigator**) Research Department of Neuroscience, Ruhr-Universität Bochum
11/2012 – 05/2016	**Principal Investigator** Department of General Zoology & Neurobiology, Ruhr-University Bochum
07/2015 – 05/2016	Board member International Graduate School,of Neuroscience,Ruhr-University Bochum
12/2009 – 11/2012	**Postdoctoral researcher Department** of General Zoology & Neurobiology, Ruhr-University Bochum

08/2009 – 12/2009	**Postdoctoral researcher** Laboratoire de Neurobiologie des Reseaux Sensorimoteurs, Université Paris Descartes, **Postdoctoral researcher** Department of General Zoology & Neurobiology, Ruhr-University Bochum

Education

30/09/2008	**PhD in Neuroscience** „Studies of the evolution of visual and visuo-motor structures in vertebrates" (***Summa cum laude***), International Graduate School of Neuroscience, Ruhr-University Bochum
10/2000 – 11/2004	**University studies** Biology and Mathematics Degree: 1. Staatsexamen **(1.0)**

Scholarships, grants , honors and awards

09/2014	**Preis von der Bayer Science Foundation** "Schule trifft Wissenschaft – Wissenschaft trifft Schule"
08/2009 – 12/2009	**Research fellowship** DFG "Integration of central locomotor efference copies and visuo-vestibular sensory signals for gaze stabilization in larval Xenopus"
11/2006	**LaureateWolfgang-Seel-Preises** der Ruhr-Universität Bochum
05/2005 – 05/2008	**Scholarship holder** International Graduate School of Neuroscience, Ruhr University Bochum

Advanced training

07/2016	Laserschutzbeauftragte-technische Laseranwendungen Erwerb der Sachkunde gemäß $ 5 (2) OStrV und Abschnitt 5 TROS
06/2014	Fortbildungsveranstaltung zur Vermittlung der Sachkunde nach §15 Abs.2 S. 1 Nr. 3, Abs. 4 Gentechnik- Sicherheitsverordnung
10/2004	FELASA (Kategorie B) (äquivalent EU Funktion A)

Publicationlist

Article

M. Kubitschke, M. Müller, L. Wallhorn, M. Pulin, M.Mittag, S. Pollok, T. Ziebarth, S.Bremshey, J. Gerdey, KC Claussen, K. Renken, J. Groß, N. Meyer, S. Wiegert, A. Reiner, M. Fuhrmann, **OA Masseck**. *sDarken*: Next generation genetically encoded sensors for serotonin. bioRxiv doi: https://doi.org/10.1101/2022.03.10.483799

M. Pulin, K. Stockhausen, OA. Masseck, M. Kubitschke, B. Busse, J. Wiegert, and T. Oertner. (2022). Orthogonally-polarized excitation for improved two-photon and second-harmonic-generation microscopy, applied to neurotransmitter imaging with GPCR-based sensors- Biomed. Opt.Express 13, 777-790. https://doi.org/10.1364/BOE.448760

Joshi S, Hater F, Eirich J, Palovaara J, Ellinghaus H, Heinkow P, Doschke H, Callenius H, Peter A, Schweser O, Kubitschke M, Madduri MK, Mathew AJ, Furlani D, Colombi Ciacchi L, Kirstein J, Maedler K, **Masseck OA**, Finkemeier I, Radmacher M, Groß-Hardt R. A versatile mitochondria isolation- and analysis-pipeline generates 3D nano-topographies and mechano-physical surface maps of single organelles. bioRxiv 2021.10.31.466655; doi: https://doi.org/10.1101/2021.10.31.466655

Rook N, Tuff J., Isparta S, **Masseck OA**, Herlitze S, Güntürkün O, Pusch R. AAV1 is the optimal viral vector for optogenetic experiments in pigeons (*Columba livia*). Commun. Biol. 2021 Jan 22;4(1):100. doi: 10.1038/s42003-020-01595-9. PMID: 33483632; PMCID: PMC7822860.

Berg L, Gerdey J, **Masseck OA** (2020). Optogenetic manipulation of neuronal activity to modulate behavior in freely moving mice. J. Vis Exp. doi:10.3791/61023

Berg L, Eckardt J, **Masseck OA**. (2019.) Enhanced activity of pyramidal neurons in the infralimbic cortex drives anxiety behavior. PLoS One. 2019 Jan 24;14(1):e0210949. doi: 10.1371/journal.pone.0210949. eCollection 2019.

Hasegawa E, Maejima T, Yoshida T, **Masseck OA**, Herlitze S, Yoshioka M,Sakurai T, Mieda M. (2017) Serotonin neurons in the dorsal raphe nucleus mediate the anticataplectic action of orexin neurons by reducing amygdala activity. Proc Natl Acad Sci USA Apr 25;114(17):E3526-E3535. doi: 10.1073/pnas.1614552114. Epub 2017 Apr 10. PMID: 28396432

Spoida K, Eickelbeck D, Karapinar R, Eckhardt T, Mark MD, Jancke D, Ehinger BV, König P, Dalkara D, Herlitze S, **Masseck OA** (2016). Melanopsin Variants as Intrinsic Optogenetic On and Off Switches for Transient versus Sustained Activation of G Protein Pathways. Curr Biol. 2016 May 9;26(9):1206-12. doi: 10.1016/j.cub.2016.03.007. Epub 2016 Apr 7.PMID: 27068418

Lux V, **Masseck OA**, Herlitze S, Sauvage M. (2015). Optogenetic destabilization of the memory trace in CA1: insights into reconsolidation and retrieval processes. Cerebral Cortex Jan 1;27(1):841-851. doi: 10.1093/cercor/bhv282.

Spoida K, **Masseck OA**, Deneris ES, Herlitze S. (2014). Gq/5-HT2c receptor signals activate a local GABAergic inhibitory feedback circuit to modulate serotonergic firing and anxiety in mice. Proc Natl Acad Sci U S A 111(17):6479-84.

Masseck OA, Spoida K, Dalkara D, Maejima T, Rubelwoski JM, Wallhorn L, Deneris ES, Herlitze S. (2014) Vertebrate cone opsins enable sustained and highly sensitive rapid control of Gi/o signaling in anxiety circuitry. Neuron 81 (6): 1263-1273.

Gutierrez DV, Mark MD, **Masseck OA**, Maejima T, Kuckelsberg D, Hyde RA, Krause M, Kruse W, Herlitze S (2011). Optogenetic control of motor coordination by Gi/o protein-coupled vertebrate

rhodopsin in cerebellar Purkinje cells. J Biol Chem 286: 25848-58.

Masseck OA, Förster S, Hoffmann KP (2010). Sensitivity of the goldfish motion detection system revealed by incoherent random dot stimuli: Comparison of behavioural and neuronal data. PLoS One 5(3):e9461.

Masseck OA, Hoffmann KP (2009). A question of reference frames: Visual direction-selective neurons in the accessory optic system of goldfish. J Neurophysiol 102: 2781-2789.

Masseck OA, Hoffmann KP (2008). Responses to moving visual stimuli in pretectal neurons of the small-spotted dogfish (Scyliorhinus canicula). J. Neurophysiol. 99: 200-207.

Masseck OA, Röll B, Hoffmann KP (2008). The optokinetic reaction in foveate and afoveate geckos. Vision Res 48: 765-772.

Book chapters and Reviews

Masseck OA A guide to optogenetic applications, with special focus on behavioral and in vivo electrophysiological experiments. In Handbook of In Vivo Neural Plasticity Techniques: A Systems Neuroscience Approach to the Neural Basis of Memory and Cognition. Book Chapter. Elsevier.

Masseck OA, Spoida K, Herlitze S. (2015). Optogenetics. In Biotechnology. De Gruyter 1.Auflage 313-346. Book Chapter.

Masseck OA, Mark MD, Herlitze S (2014) Use of Optogenetic Approaches to Control Intracellular Signaling of G Protein-Coupled Receptors. G-Protein Copuled Receptor Genetics. Methods in Pharmacology and Toxicology pp. 149-160. Springer Verlag Book Chapter.

Maejima T, **Masseck OA**, Mark MD, Herlitze S. (2012) Modulation of firing and synaptic transmission of serotonergic neurons by intrinsic G protein-coupled receptors and ion channels. Front Integr Neurosci. 2013;7:40. Review.

Masseck OA, Rubelowski JM, Spoida K, Herlitze S (2011). Light- and Drug-activated G-Protein coupled Receptors to control intracellular Signaling. Exp. Physiol 96:51-6. Review.

Masseck OA, Hoffmann KP (2009). Comparative neurobiology of the optokinetic reflex. Ann N Y Acad Sci 1164: 430-439. Review.