

Center for Brain Research, Department of Neuronal Cell Biology
 Medical University of Vienna
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Professional Experience

- April 2022 - Tenure Track Assistant Professor, Medical University Vienna, Center for Brain Research
- 2015-2022 Postdoctoral Scientist, **Sabatini Lab** (Cortical neuropeptides, Optical sensors, VIP cells, Fear memory), Harvard Medical School, USA
- 2014-2015 Postdoctoral Scientist, **Monyer Lab** (In vivo patching, Oxytocin responses in PFC), DKFZ and University Clinics Heidelberg, Germany
- 2010-2014 Ph.D. project, **Monyer/Seeburg lab** (Cortical GABAergic long-range projections), University Heidelberg, Germany
- 2011 Research project, **Whittington Lab** (GABAergic long-range projections and network oscillations), Newcastle University, UK
- 2010 Research Project and Master thesis, **Monyer lab** (Cortical parvalbumin-expressing neurons), Ruprecht-Karls-University Heidelberg
- 2009 Research project, **Whittington Lab** (NMDA receptors and network oscillations), Newcastle University, UK
- 2009 Summer internship, **Knoepfel lab** (Gap junctions in the cerebellum), RIKEN Brain Science Institute, Japan
- 2008 Undergraduate research project and Bachelor thesis, **Pueschel Lab** (Molecular control of axon guidance), Westfaelische Wilhelms-Universitaet Muenster, Germany
- 2008 Undergraduate internship, **Rohrer lab** (Proliferation of embryonic sympathetic neurons), MPI for Brain Research, Germany

Education

- 2010-2014 **Ph.D. in Neuroscience**, University Heidelberg, Germany; *summa cum laude*
- 2013 **Transylvanian Experimental Neuroscience Summer School**, Modern electrophysiological and optical methods
- 2008-2010 **Master in Molecular Biosciences**, Ruprecht-Karls-University Heidelberg, Germany; Grade 1 (from 1 down to 6)
- 2008-2010 **Immunology College**, German National Academic Foundation
- 2005-2008 **Bachelor in Biological Sciences**, Westfaelische Wilhelms-Universitaet Muenster, Germany and Rijksuniversiteit Groningen, Netherlands; Grade 1 (from 1 down to 6)
- 2008 **Summer Academy**, Alzheimer's disease, German National Academic Foundation

Awards, Fellowships and Grants

- 2021 **WWTF VRG** starting grant
- 2021 **ERC** starting grant
- 2018-2019 **Alice and Joseph Brooks Fund** Postdoctoral Fellowship
- 2017-2019 **DFG** Research Fellowship
- 2016-2017 **EMBO** Long-Term Fellowship
- 2015-2019 **The Ellen R. and Melvin J. Gordon Center for the Cure and Treatment of Paralysis** Fellowship
- 2014 **IBRO-PERC** travel grant for the FENS Brain Conference, Denmark
- 2008-2010 **German National Academic Foundation** Fellowship
- 2010 **German National Academic Foundation** Research Project Abroad Fellowship, Newcastle University, UK
- 2009 **RIKEN Summer Program** Intern Fellowship, RIKEN Brain Science Institute, Japan
- 2009 **German National Academic Foundation** Research Project Abroad Fellowship, RIKEN Brain Science Institute, Japan
- 2008 **Award** for the 2% best BSc students, Westfaelische Wilhelms-Universitaet Muenster
- 2007 **Erasmus**, Rijksuniversiteit Groningen, Netherlands

Teaching, Mentoring and Outreach

- 2020-2021 **Diversity & Inclusion** Outreach Subcommittee, Harvard Medical School, USA
 2019 **Career seminar** for PhD students, University Regensburg, Germany
 2015-2020 **Supervision and mentoring** at Harvard Medical School, USA: 3 undergraduates, 1 postdoc, 2 research technicians, 2 Armenise-Harvard fellows from Italy, 1 NCCR-Synapsy awardee from Switzerland
 2010-2015 **Supervision and mentoring** at University Heidelberg, Germany: 1 Master's student, 1 PhD student, 1 research technician, several high school students
 2008-2010 Neuroscience M.S. **Program Representative**, University Heidelberg, Germany
 2007 **Chemistry tutorial**, University Muenster, Germany

Editorial Work

- Since 2016 **Reviewer:** *eLife*, *Hippocampus*, *Frontiers in Neuroscience*, *Nature Reviews Neuroscience*
 Since 2020 **Editorial reviewing committee:** *Frontiers*

List of Invited Talks

- International Symposium on Regulatory Peptides, **Invited virtual talk, Acapulco, Mexico**, 2021
- **Aarhus University/DANDRITE virtual seminar**, Aarhus Denmark, 2021
- **SWC Virtual Seminar:** 'Neuromodulation of cortical circuits for fear memories', UK, 2021
- **LIN Virtual Seminar**, Leibniz Institute Magdeburg, Germany, 2021
- GRK 2174 Colloquium on Emotional Dysregulation, **University Regensburg**, Germany, 2019
- 22nd International Symposium on Regulatory Peptides, **Young Investigator's Neuroscience Lecture, Acapulco, Mexico**, 2018
- **Scientific Meeting of the Royal Society:** "Evolution and functional biology of neuropeptide signalling: from genomes to behaviour", Kavli Royal Society Centre, UK, 2017
- Annual conference on the Cure and Treatment of Paralysis at the Ellen R. and Melvin J. **Gordon Center**, USA, 2017-2019
- Department of Neurobiology, **Harvard Medical School**, USA, 2016
- Gladstone Institute, **San Francisco University**, USA, 2014
- Department of Molecular and Cell Biology, **Berkeley University**, USA, 2014
- Department of Neurobiology, **Harvard Medical School**, USA, 2014
- The Picower Institute for Learning and Memory, **MIT**, USA, 2014
- Wolfson Institute for Biomedical Research, **University College London**, UK, 2014
- Retreat symposium, **Interdisciplinary Center for Neurosciences**, Germany, 2012
- Seminar, **Interdisciplinary Center for Neurosciences**, University Heidelberg, Germany, 2012

List of Conference Posters

- **Bernstein Conference**, online, 2020
- **GRC** on "Modulation of Neural Circuits and Behavior, Switzerland, 2019
- **EMBO** fellows meeting, Germany, 2018
- **Scientific Meeting of the Royal Society** (Evolution and functional biology of neuropeptide signalling: from genomes to behaviour), Kavli Royal Society Centre, UK, 2017
- **SfN** annual meeting, USA, 2015
- **Spring Brain Conference** (Controlling Neurons, Circuits and Behaviour), Denmark, 2014
- **Retreat** of the Interdisciplinary Center for Neurosciences, Germany, 2013
- **7th Brain Research Conference** (Optogenetics and Pharmacogenetics in Neuronal Function and Dysfunction), USA, 2012
- **SfN** annual meeting, USA, 2012
- **EMBO** Workshop on Cortical Interneurons in Health and Disease, Mallorca, 2012
- **SfN** annual meeting, Washington D.C., USA, 2011
- **Retreat** of the Interdisciplinary Center for Neurosciences, Germany, 2013
- **FENS conference**, Amsterdam, Netherlands, 2010

List of Publications (first author)

Melzer S, Newmark E, Mizuno GO, Hyun M, Philson AC, Quiroli E, Righetti B, Gregory MR, Huang KW, Tian L, Sabatini BL: Bombesin-like peptide recruits disinhibitory cortical circuits and enhances fear memories. *Cell* 2021, 184 (22): 5622-5634

Melzer S, Monyer H: Diversity and function of corticopetal and corticofugal GABAergic projection neurons. *Nature Reviews Neuroscience* 2020, 21: 499-515

Melzer S*, Gil M*, Koser DE, Michael M, Huang KW, Monyer H: Distinct corticostriatal GABAergic neurons modulate striatal output neurons and motor activity. *Cell Reports* 2017, 19 (5): 1045-1055

Leitner FC*, **Melzer S***, Luetcke H, Pinna R, Seeburg PH, Helmchen F, Monyer H: Spatially segregated feedforward and feedback neurons support differential odor processing in the lateral entorhinal cortex. *Nature Neuroscience* 2016, 19 (7): 935-944

Melzer S*, Michael M*, Caputi A, Eliava M, Fuchs EC, Whittington MA, Monyer H: Long-range-projecting GABAergic neurons modulate inhibition in hippocampus and entorhinal cortex. *Science* 2012, 335 (6075): 1506-1510

*co-first author

List of Publications (collaborative)

Wu Y, Wu M, Vázquez-Guardado A, Kim J, Zhang X, Avila R, Kim JT, Deng Y, Xu Y, **Melzer S**, Bai Y, Meng L, Zhang Y, Guo H, Hong L, Kanatzidis E, Haney CR, Waters EA, Hu Z, Lie F, Chamorro LP, Sabatini BL, Huang Y, Kozorovitskiy Y, Rogers JA: Real-time programmable gene delivery, optogenetics and photopharmacology enabled by wireless multi-lateral optofluidic microsystems. *Nature Communications* (under revision)

Johnson C, Kretsge LN, Yen WW, Wingfield KK, Sriram B, O'Connor A, Liu RS, Jimenez JC, Rhadke RA, Yeung C, Jinadasa TJ, Nguyen TPH, Cho ES, Fuchs E, Spevack ED, Velasco BE, Hausmann FS, Fournier LA, Brack A, **Melzer S**, Cruz-Martín A: Highly unstable heterogeneous representations in VIP interneurons of the anterior cingulate cortex. *Molecular Psychiatry*, 2022

Jekély G, **Melzer S**, Beets I, Grunwald Kadow IC, Koene J, Haddad S, Holden-Dye L: The long and short of it: a perspective on peptidergic regulation of circuits and behaviour. *Journal of Experimental Biology*, 2018, 221

Fuchs EC*, Neitz A*, Pinna R*, **Melzer S**, Caputi A, Monyer H: Local and distant input controlling excitation in layer II of the medial entorhinal cortex. *Neuron* 2016, 89 (1): 194-208

Caputi A, **Melzer S**, Michael M, Monyer H: The long and short of GABAergic neurons. *Current Opinion in Neurobiology* 2013, 23 (2): 179-86