Curriculum vitae

Aarti Swaminathan

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Research experience

Sept 2022 -	Post doctoral researcher, Nikolai Axmacher lab, Ruhr Universität Bochum
July 2019- Aug 2022	Post doctoral researcher, Dietmar Schmitz lab, Charité Universitätsmedizin, Berlin *Research : 'Understanding the function of mossy cells invivo during ripples using optogenetics'*

Education

Aug 2014-June 2019	**PhD** (*Summa cum laude*), NeuroCure Phd program, Laboratory of Prof. Dr. Dietmar Schmitz, Charité Universitätsmedizin, Berlin. *Thesis title : 'Role of hilar mossy cells in the dentate gyrus-CA3 network during sharp-wave ripples'*
Oct 2012- Mar 2014	**Masters in Neurosciences,** International Max Planck Research School, Göttingen, Germany. *Thesis title : 'Role of non-coding RNAs in the hippocampus during contextual fear conditioning', Supervisor: Dr.André Fischer, ENI, Göttingen*
Aug 2008- May 2012	**Bachelors** degree in Biotechnology, Mepco Schlenk Engineering College, Anna University Chennai, India. *Thesis title : 'Potential role of serotonin in maintenance of pluripotency in mouse ES cells', Supervisor: Dr.Mitradas Panicker, NCBS, Bangalore*

Research Interests

I am interested in understanding aspects of memory encoding and retrieval in the hippocampus, parahippocampal regions and the role of ripples in this process. Specifically, the mechanisms of pattern separation in the hippocampus and cortex during a mneumonic discrimination task using intracranial EEG recordings in humans.

Publications

Imbrosci B, Nitzan N, McKenzie S, Donoso J, **Swaminathan A**, Böhm C, Maier N, Schmitz D. (2021) Subiculum as a generator of sharp wave-ripples in the rodent hippocampus. *Cell Reports 35, 109021*.

Kuijpers M , Kochlamazashvili G, Stumpf A , Puchkov D, **Swaminathan A,** Lucht MA, Krause E, Maritzen T, Schmitz D, Haucke V. (2021) Neuronal Autophagy Regulates Presynaptic Neurotransmission by Controlling the Axonal Endoplasmic Reticulum. *Neuron 20;109(2):299-313.e9*.

Beed P, Ray S, Velasquez L.M, Stumpf A, Parthier D, **Swaminathan A**, Nitzan N, Breustedt J, Las L, Brecht M, Schmitz D. (2020) Species-specific differences in synaptic transmission and plasticity. *Sci Rep 10, 16557*.

Swaminathan A, Wichert I, Schmitz D, Maier N. (2018) Involvement of Mossy Cells in Sharp Wave-Ripple Activity In Vitro. *Cell Rep. 23(9):2541-2549*.

Burk K, Ramachandran B, Ahmed S, Hurtado-Zavala JI, Awasthi A, Benito E, Faram R, Ahmad H, **Swaminathan A**, McIlhinney J, Fischer A, Perestenko P, Dean C. (2017) Regulation of Dendritic Spine Morphology in Hippocampal Neurons by Copine-6. *Cereb Cortex. 2017 Feb 3:1-18.*

Academic achievements

- NeuroCure Excellence Cluster PhD fellowship (2014-2017), Charité Universitätsmedizin, Berlin.
- International Max Planck Research School, Göttingen, Masters Stipend (2012-2014). (Max Planck Society, Germany)
- National Science Fellowship for Students (KVPY, Government of India) Summer Fellowship 2010.

Conferences

- SfN, San Diego 2018 titled “Involvement of hilar mossy cells in the functional coupling between CA3 and dentate gyrus during sharp wave-ripple activity”
- FENS, Berlin titled ‘Mossy cell-mediated functional coupling between area CA3 and dentate gyrus during sharp wave-ripple activity’ (July 7-11, 2018)
- **‘Young Investigator’** talk titled “Synaptic input and output of hilar mossy cells during sharp-wave ripples” at the German Neuroscience Conference, Göttingen (Mar 22-25, 2017)