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Title: Neuron-Glia Interactions in Neural Circuits

Curriculum Vitae

Education and Research

2017 - Present	Institute for Anatomy and Cell Biology, Heidelberg University, Germany The Chica Heinz Schaller Research Group Leader
2016 - 2017	Johns Hopkins University, Baltimore, USA Junior Faculty (Research Associate), Department of Neuroscience
2010 - 2016	Johns Hopkins University, Baltimore, USA Post-doctoral fellow, Department of Neuroscience
2005 - 2010	Max-Planck Institute of Experimental Medicine and Georg-August University, Göttingen, Germany Doctor of Philosophy (Ph.D.), Neuroscience
2003 - 2005	International Max-Planck Research School for Neurosciences and Georg-August University, Göttingen, Germany Master of Science (M.Sc.), Neuroscience

Honors and Awards

2017 - 2022	Chica and Heinz Schaller Research Group Leader Award, Heidelberg, Germany
2016 - 2018	NARSAD Young Investigator Grant, Brain & Behavior Research Foundation, USA
2016	Anuradha Rao Memorial Award, Cell Press/Society for Neuroscience, USA
2016	W. Barry Wood Jr. Young Investigator Award, Johns Hopkins University, USA
2016	FENS-IBRO/PERC Travel Award, FENS Forum 2016, Copenhagen, Denmark
2013	Best Poster award at 3rd Tykeson Fellows Conference on Multiple Sclerosis, USA
2011 - 2014	National Multiple Sclerosis Society Post-Doctoral Fellowship, New York, USA
2004 - 2008	Max-Planck Society Stipend for Graduate Students, Germany
2003 - 2004	International Max-Planck Research School Stipend, Germany

Professional Services and memberships

2018 – present	Member, German Neuroscience Society, Germany
2015 – present	Editorial Board member: Frontiers in Cellular Neuroscience, Matters Journal
2015	Ad hoc grant reviewer for Spinal Cord Research Foundation, Wings for Life, Austria
2010 – present	Ad hoc reviewer: Journal of Neuroscience, Journal of Neuroscience Research, Molecular Medicine, Frontiers of Molecular Neuroscience, PLOS-One
2010 – present	Member, Society for Neuroscience, USA

Publications

Selected Publications

1. Larson V.A., Mironova Y., Vanderpool K.G., Waisman A., Rash J.E., **Agarwal A.***, Bergles D.E*. **(2018)** Oligodendrocytes control potassium accumulation in white matter and seizure susceptibility. **Elife**. Mar 29;7 (***shared corresponsding author**).
2. **Agarwal, A.**, Wu,' P.H., Hughes, E.G., Fukaya, M. Tischfield, M.A., Langseth, A.J., Wirtz, D., Bergles,' D.E. **(2017)** Transient opening of the mitochondrial permeability transition pore induces microdomain calcium transients in astrocyte processes. **Neuron** 93(3): 587-605 (Highlighted as cover art)
3. Goebbels, S., Wieser, G., Pieper, A., Spitzer, S., Weege, B., Yan, K., Edgar, J., Yagensky, O., Wichert, S., **Agarwal, A.**, Karram, K., Rossner, M., Tessier-Lavigne M., Káradóttir, R., Nave, K.A. **(2017)** A neuronal PIP_3-dependent program of oligodendrocyte precursor recruitment and myelination. **Nature Neuroscience** 10.1038/nn.4425
4. Perea, G., Gómez, R., Mederos, S., Covelo, A., Ballesteros, J.J., Schlosser, L., Hernández-Vivanco, A., Martín-Fernández, M., Quintana, R., Rayan, A., Díez, A., Fuenzalida, M., **Agarwal, A.**, Bergles, D.E., Bettler, B., Manahan-Vaughan, D., Martín, E.D., Kirchhoff, F., Araque, A., **(2017)** Activity-dependent switch of

GABAergic inhibition into glutamatergic excitation in astrocyte-neuron networks. **eLife**. doi: 10.7554/eLife.20362.

5. Kim, Y.S., Anderson, M., Park, K., Zheng, Q., **Agarwal, A.**, Gong, C., Saijilafu, Young, L., He, S., LaVinka P.C., Zhou, F., Bergles, D.E., Hanani, M., Guan, Y., Spray, D.C., and Dong, X. **(2016)** Coupled activation of primary sensory neurons contributes to chronic pain. **Neuron** 91(5): 1085-96
6. Zhang-Hooks, Y., **Agarwal, A.**, Mishina, M., Bergles, D.E. **(2016)** NMDA receptors enhance spontaneous activity and promote neuronal survival in the developing cochlea. **Neuron** 89(2): 337-50
7. Wang, H.C., Lin, C.C., Cheung, R., Zhang-Hooks, Y., **Agarwal, A.,** Ellis-Davies, G., Rock, J., Bergles, D.E. **(2015)** Spontaneous activity of cochlear hair cells triggered by fluid secretion mechanism in adjacent support cells. **Cell** 163(6): 1348-59
8. Otsu, Y., Couchman, K., Lyons, D.G., Collot, M., **Agarwal, A.**, Mallet, J-M., Pfrieger, F.W., Bergles, D.E., Charpak, S. **(2015)** Calcium dynamics of astrocyte during neurovascular coupling. **Nature Neuroscience**. 18(2): 210-8
9. **Agarwal, A.**, Zhang, M., Trembak-Duff, I., Unterbarnscheidt, T., Radyushkin, K., Dibaj, P., Martins de Souza, D., Boretius, S., Brzózka, M.M., Steffens, H., Berning, S., Teng, Z., Gummert, M., Tantra, M., Guest, P.C., Willig, K.I., Frahm, J., Hell, S.W., Bahn, S., Rossner, M.J., Nave, K.-A., Ehrenreich, H., Zhang, W., and Schwab, M.H. **(2014)** Dysregulated expression of neuregulin-1 by cortical pyramidal neurons disrupts synaptic plasticity. **Cell Reports**. 8(4): 1130-45.
10. Paukert, M*., **Agarwal, A*.**, Cha, J., Doze, V.A., Kang, J.U., Bergles D.E. **(2014)** Norepinephrine controls astroglial responsiveness to local circuit activity. **Neuron.** 82(6): 1263-70 (***Equal contribution**).
11. Issa, J.B., Haeffele, B.D., **Agarwal, A.**, Bergles, D.E., Young, E.D., Yue, D.T. **(2014)** Multiscale Optical Ca^{2+} Imaging of Tonal Organization in Mouse Auditory Cortex. **Neuron.** 83(4): 944-59
12. **Agarwal, A.,** Bergles, D.E. **(2014)** Astrocyte morphology is controlled by neuron-derived FGF. **Neuron.** 83(2): 255-7
13. **Agarwal, A.,** Dibaj P., Kassmann C.M., Goebbels S., Nave, K.-A., and Schwab, M. H. **(2012)** In vivo imaging and non-invasive ablation of pyramidal neurons in adult NEX-CreERT2 mice. **Cerebral Cortex**. 22(7): 1473-86 (Highlighted as cover art)
14. Brinkmann, B. G*., **Agarwal, A.*,** Sereda, M. W., Garratt, A.N., Müller, T., Wende, H., Nawaz, S., Humml, C., Velanac, V., Radyushkin, K., Goebbels, S., Fischer, T. M., Lai, C., Ehrenreich, H., Birchmeier, C., Schwab, M. H., and Nave, K.-A. **(2008)** Neuregulin-1/ErbB signaling serves distinct functions in myelination of the peripheral and central nervous system. **Neuron**. 59(4): 581-95. (***Equal contribution**). (Highlighted by Faculty of 1000)

Funding

2016 – 2018 NARSAD Young Investigator Grant, Brain & Behavior Research Foundation, USA
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