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CURRICULUM VITAE

EDUCATION

Tel Aviv University, Israel	B.Sc. (<i>Magna Cum Laude</i>)	2004-2007	Biology
Tel Aviv University, Israel	Ph.D.	2007-2012	Neurobiology
Tel Aviv University, Israel	M.B.A.	2019-2021	Global M.B.A.

Ph.D. dissertation

“Elucidating the interplay between tomosyn, microRNAs, and cognitive conditions in the mouse hippocampus”. Supervisor: Prof. Uri Ashery, Tel Aviv University, Israel.

ACADEMIC AND PROFESSIONAL EXPERIENCE

2006-2007 Research Assistant in the Department of Neurobiology, Weizmann Institute of Science, Israel.
2007 Research Assistant in the Division of Neurobiology, Berkeley University of California, USA.
2008-2011 Teaching Assistant, Life Sciences Faculty, Tel Aviv University, Israel.
2009 Research Assistant in The National Institute on Aging, NIH, USA.
2012-2017 Postdoctoral Fellow at the laboratory of Prof. Guoping Feng, Department of Brain and Cognitive Sciences, Massachusetts Institute of Technology, USA.
2017-2022 Assistant Professor, Senior Lecturer, School of Psychological Sciences and the Sagol School of Neuroscience, Tel Aviv University, Israel.
2022-Present Associate Professor, School of Psychological Sciences and the Sagol School of Neuroscience, Tel Aviv University, Israel.

OTHER ACADEMICAL AND PROFESSIONAL ACTIVITIES

TEACHING AND ACADEMIC EXPERIENCE AND ROLES

2008-2011 Teaching Assistant, “Introduction to Neurobiology” for undergraduate students, Tel Aviv University, Israel.
2016, 2017 Guest Lecturer, “Genes, Circuits and Behavior” for undergraduate students, Massachusetts Institute of Technology, USA.
2017-Present “Myelin and White Matter: From Structure to Function”, "Introduction to Cell Biology", “Neurobiology of Neurogenetics Syndromes” “Research Methods in Physiological Psychology”, "Introduction to Neuroscience", Tel Aviv University, Israel.

- 2018-2023 Academic advisor and mentor, The double major program in Biology and Psychology with an emphasis on neuroscience, Sagol school of neuroscience, Tel Aviv University, Israel.
- 2018-2023 Director of "Brain and Mind Disorders" hub at BiomedTAU, Tel Aviv University, Israel.
- 2020-Present Head of The international M.Sc. program in neuroscience, Sagol school of neuroscience, Tel Aviv University, Israel.
- 2021-Present Head of The Psychobiology Department, School of Psychological Sciences, Tel Aviv University, Israel.
- 2022-Present Member of the University Invention and Patent Committee, Tel Aviv University, Israel.

ORGANISATION OF SCIENTIFIC MEETINGS

- 2018 Conference organizer, Child health symposium, Israel. 200 participants.
- 2019 Meeting organizer, Sagol School of Neuroscience annual meeting, Israel. 150 participants.
- 2019, 2020 Meeting organizer, Scientific committee member and Session chair, Annual meeting of the Israeli Society for Biological Psychiatry, Israel. 400 participants.

ACTIVE PARTICIPATION IN SCIENTIFIC MEETINGS

Oral presentations

- 2009 The annual meeting of the Israel Society for Neuroscience (ISFN), **Oral presentation: Barak B.**, Ashery U. Impaired learning and memory after tomosyn overexpression in the dentate gyrus of the mouse hippocampus. Eilat, Israel.
- 2010 The annual meeting of the Israel Society for Neuroscience (ISFN), **Oral presentation: Barak B.**, Ashery U. Elucidating the interplay between synaptic proteins, microRNAs, and cognitive conditions. Eilat, Israel.
- 2015 The annual meeting of the Israel Society for Neuroscience (ISFN), **Oral presentation: Barak B.** *Gtf2i*-deletion alters social behavior, the transcriptome and the neuronal and cortical properties throughout development in a novel mouse model for Williams syndrome. Eilat, Israel.
- 2016 Molecular Psychiatry Association Annual meeting, **Invited speaker, Oral presentation: Barak B.** Functional and structural study of *Gtf2i*-deletion in forebrain excitatory neurons as a mouse model for Williams syndrome. Hawaii, USA.
- 2017 The annual meeting of the Israel Society for Neuroscience (ISFN), **Session Chair and Oral presentation: Barak B.** Altered neuron-glia interactions as a novel pathophysiological approach in Williams syndrome. Eilat, Israel.
- 2018 Justen Passwell Memorial Symposium, **Invited speaker, Oral presentation: Barak B.** Altered neuron-glia interactions as a novel pathophysiological approach in Williams syndrome. Weizmann Institute of Science, Rehovot, Israel.
- 2018 Annual meeting of the Israeli Society for Biological Psychiatry, **Session Chair and Oral presentation: Barak B.** Myelination deficits as novel pathophysiological findings in Williams syndrome. Kfar Blum, Israel.
- 2018 Stability and plasticity of neural circuits symposium, **Invited speaker, Oral presentation: Barak B.** Altered neuron-glia interactions affect myelination and social behavior in Williams syndrome. Tel Aviv, Israel.

- 2018 Child health symposium, *Conference organizer, Invited speaker, Oral presentation: Barak B.* Altered myelination as a novel pathophysiological approach in Williams syndrome. Tel Aviv, Israel.
- 2019 Annual meeting of the Israeli Society for Biological Psychiatry, *Meeting organizer, Session Chair and Invited speaker, Oral presentation: Barak B.* Neuron-glia interactions modulation of social behavior in Williams syndrome. Kfar Blum, Israel.
- 2020 Humboldt Kolleg Meeting, *Invited speaker, Oral presentation: Barak B.* Neuron-glia interaction, myelination and behavior: how are they all intertwined. Eilat, Israel.
- 2020 The annual meeting of the Israel Society for Neuroscience (ISFN), *Invited speaker, Oral presentation: Barak B.* The roles of altered neuron-glia interaction and myelination properties in hypersociability. Eilat, Israel.
- 2020 The 8th international meeting of the Integrated Brain and Behavior Research Center (IBBRC) at the University of Haifa, *Invited speaker, Oral presentation: Barak B.* How can neuron-glia interactions modulate social behavior in a neurodevelopmental disorder? Haifa, Israel.
- 2020 Clinical Trials in Rare Diseases: A Virtual Event, *Invited speaker, Oral presentation: Barak B.* From bench to bedside: taking a drug from the lab to a clinic to treat Williams Syndrome. Online conference, <https://www.arena-international.com/ctrdiseases/>
- 2022 International Conference on Williams Syndrome, *Invited speaker, Oral presentation: Barak B.* New neurobiological insights in our understanding of Williams syndrome. Rome, Italy.
- 2023 Outsourcing in Clinical Trials & Clinical Trial Supply Israel 2023, *Invited speaker, Oral presentation: Barak B.* From bench to bedside: taking a drug from the lab to a clinic to treat Williams Syndrome. Tel Aviv, Israel.
- 2023 Annual meeting of the Israeli Society for Biological Psychiatry, *Session Chair and Oral presentation: Barak B.* Myelination deficits in Williams syndrome: From the bench to the bedside. Kfar Blum, Israel.
- 2023 15th Biennial ISN Satellite meeting on myelin biology, *Oral presentation: Barak B.* Novel mechanism for myelination regulation. Baiao, Portugal.
- 2023 ISN-ESN Meeting, *Invited speaker, Oral presentation: Barak B.* Novel mechanistic insights on myelination regulation in health and illness. Porto, Portugal.
- 2023 American Academy of Child and Adolescent Psychiatry annual meeting, *Oral presentation: Barak B.* Symptomatic and mechanism-based treatments for neuropsychiatric symptoms in Williams syndrome. New York city, USA.

Poster presentations

- 2010 Mechanisms of Exocytosis Ca²⁺ Channels, GPCRs and Intracellular Ca²⁺ Binding Proteins international meeting, *poster presentation: Barak B., Ashery U.* Enriched environment effects on synaptic proteins expression in the mouse hippocampus. Jerusalem, Israel.
- 2010 Annual meeting of the International Behavioral Neuroscience Society, *poster presentation: Barak B., Ashery U.* Impaired learning and memory after tomosyn overexpression in the dentate gyrus of the mouse hippocampus. Sardinia, Italy.
- 2011 Measuring Behavior and Physiology conference, *poster presentation: Barak B., Ashery U.* Impaired learning and memory after tomosyn overexpression in the dentate gyrus of the mouse hippocampus. Rehovot, Israel.
- 2012 Synthesis, degradation and localization of molecules and neuronal structures in learning and memory processes international conference, *poster presentation: Barak B., Ashery U.* Neuron-specific expression of tomosyn1 in the mouse hippocampal dentate gyrus impairs spatial learning and memory. Haifa, Israel.

- 2012 Brain Plasticity Symposium, *poster presentation*: **Barak B.**, Ashery U. Neuron-specific expression of tomosyn1 in the mouse hippocampal dentate gyrus impairs spatial learning and memory. Tel Aviv, Israel.
- 2015 Champalimaud neuroscience symposium, *poster presentation*: **Barak B.** *Gtf2i*-deletion affects social behavior, neuronal morphology and the transcriptome in a novel mouse model for Williams syndrome. Lisbon, Portugal.
- 2022 Gordon Research Conference on Myelin, *poster presentation*: Levy G., **Barak B.** *Gtf2i* deletion from myelinating glia induces hypermyelination and behavioral alterations in a mouse model related to Williams syndrome. Lucca, Italy.
- 2022 Cold Spring Harbor Laboratory, Glia in Health & Disease, *poster presentation*: Levy G., **Barak B.** *Gtf2i* deletion from myelinating glia induces hypermyelination and behavioral alterations in a mouse model related to Williams syndrome. CSHL, NY, USA.

INVITED LECTURES AND SEMINARS

- 2017 Edmond & Lily Safra Center for Brain Sciences, *Invited speaker, Oral presentation*: **Barak B.** Myelination and hypersociability in Williams syndrome. Jerusalem, Israel.
- 2018 Zlotowski seminar, *Invited speaker, Oral presentation*: **Barak B.** Neurogenetics of social behavior abnormalities. Beer Sheba, Israel.
- 2018 The Sagol Center for Hyperbaric Medicine and Research in Assaf Harofeh Medical Center, *Invited speaker, Oral presentation*: **Barak B.** *Shank3* as a monogenic cause of autism. Beer Yaakov, Israel.
- 2019 Feinstein Institute for Medical Research, *Invited speaker, Oral presentation*: **Barak B.** The neurobiological mechanisms related to neurodevelopmental disorders. New York, USA.
- 2019 Italian Institute of Technology, *Invited speaker, Oral presentation*: **Barak B.** Pharmacological aspects in neurodevelopmental disorders. Genova, Italy.
- 2019 Life and Health Sciences Research Institute, Minho University, *Invited speaker, Oral presentation*: **Barak B.** How myelin can modulate behavioral alterations? Braga, Portugal.
- 2019 Department of Neurobiology in Haifa University seminar, *Invited speaker, Oral presentation*: **Barak B.** Neuro-glia interactions in myelination. Haifa, Israel.
- 2019 The Division of Neurology, Tel Aviv Sourasky Medical Center (Ichilov). *Invited speaker, Oral presentation*: **Barak B.** Genetic neurodevelopmental disorders and behavioral alterations. Tel Aviv, Israel.
- 2019 Institute for Biological Research, *Invited speaker, Oral presentation*: **Barak B.** The role of neuronal *Gtf2i* in moderating myelination and behavior in mice. Nes Tziona, Israel.
- 2020 The Gonda Brain Research Center, Bar-Ilan University. *Invited speaker, Oral presentation*: **Barak B.** Neuronal modulation of myelination and social behavior. Ramat Gan, Israel.
- 2020 The Medicine & Humanities Interdisciplinary Colloquium, Tel Aviv University. *Invited speaker, Oral presentation*: **Barak B.** Neurons, glia and social behavior. Tel Aviv, Israel.
- 2021 Institute for Drug Research seminar, *Invited speaker, Oral presentation*: **Barak B.** How can neurons mediate myelination and behavioral properties? Jerusalem, Israel.
- 2021 Sheba Medical Center, *Invited speaker, Oral presentation*: **Barak B.** Updates on Phelan McDermid syndrome basic research. Ramat Gan, Israel.
- 2021 Weizmann Institute of Science, Department of Brain Sciences, *Invited speaker, Oral presentation*: **Barak B.** Neuron-glia interactions in neurodevelopmental disorders: from basic research to clinical trial. Rehovot, Israel.
- 2021 Department of Neurobiology in Haifa University seminar, *Invited speaker, Oral presentation*: **Barak B.** What can we learn from neuron-glia interaction and myelination in neurodevelopmental disorders? Haifa, Israel.

- 2022 The Gonda Brain Research Center, Bar-Ilan University. *Invited speaker, Oral presentation: Barak B.* Social behavior abnormalities: what can we learn from Williams syndrome? Ramat Gan, Israel.

ACADEMIC AND PROFESSIONAL AWARDS AND FELLOWSHIPS

- 2007 B.Sc. in Biology, *Magna Cum Laude*, Tel Aviv University, Israel
- 2008 Award from the Tel Aviv University graduate school for excellent achievements in teaching, research and studies, Tel Aviv University, Israel
- 2009, 2011 Boehringer Ingelheim Fonds travel grant
- 2010 Joan and Jaime Constantiner Institute travel scholarship
- 2010 Adams super-center travel award for excellence in brain research
- 2011 Strauss Computational Neuroimaging center travel grant
- 2011 Dan David Prize scholarship for young promising researchers
- 2012, 2013 Simons Postdoctoral Fellowship
- 2014 IMFAR Stakeholder Travel Award
- 2014 Autism Science Foundation Post-Doctoral Fellowship
- 2016 Molecular Psychiatry Association travel award for young investigators
- 2018 Alon Fellowship for outstanding young faculty by the Israeli Council for Higher Education
- 2022 European Society for Neurochemistry (ESN) Young Investigator Award
- 2022 Federation of European Biochemical Societies (FEBS) Excellence Award
- 2022 Excellence in teaching - senior faculty "Club 100": One of the 100 outstanding lecturers
- 2023 Excellence in teaching - senior faculty "Club 100": One of the 100 outstanding lecturers

PAST AND PRESENT MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

European Society for Neurochemistry (ESN)
Society for Neuroscience (SfN)
Israel Society for Biochemistry and Molecular Biology (ISBMB)
Society for Social Neuroscience (S4SN)
Society of Biological Psychiatry (SoBP)
International Behavioral Neuroscience Society (IBNS)
Federation of European Neuroscience Societies (FENS)
Israel Society of Biological Psychiatry (ISBP), Executive Committee
Israel Society for Neuroscience (ISFN)
Molecular Psychiatry Association (MPA)
Molecular and Cellular Cognition Society (MCCS)
International Brain Research Organization (IBRO)
Alzheimer Research Forum (ARF)
Israel Neuroscience Research Link (INRL)

AD HOC REVIEWER

Journals: Annals of Behavioral Neuroscience, Applied Neuropsychology: Child, Archives of pharmacal research, Autism: International Journal of Research and Practice, Bioinformatics, Biomedicine, Biomedicine and Pharmacotherapy, Brain, Brain Sciences, Behavior, and Immunity, Cells, Cellular &

Molecular Biology Letters, Children, Current Opinion in Neurobiology, Current Pediatric Reviews, Diagnostics, eLife, Frontiers in Neurology, Genes, International Journal of Developmental Disabilities, International Journal of Environmental Research and Public Health, International Journal of Molecular Sciences, Journal of Clinical Medicine, Journal of Neuroscience Methods, Medicine, Molecular Autism, Molecular Psychiatry, Neural Regeneration Research, Neurochemical Research, NeuroMolecular Medicine, Neuron, Nutrients, PLOS ONE, The Cerebellum, World Journal of Clinical Pediatrics, World Journal of Psychiatry

Grants Applications reviewer: Binational Science Foundation (BSF), German-Israeli Foundation (GIF), Israel Science Foundation (ISF), The National Institute for Psychobiology in Israel (NIPI)

JOURNAL EDITORIAL BOARD

Annals of Behavioral Neuroscience Journal

Biology Journal

Advanced Drug Delivery Reviews (Guest editor)

SUPERVISION OF GRADUATE STUDENTS

M.Sc. students:

- 2017-2018 **Ariel Nir**, Sagol School of Neuroscience, Tel Aviv University
Title: "Characterizing white matter abnormalities in Williams syndrome"
- 2018-2020 **Meitar Grad**, Sagol School of Neuroscience, Tel Aviv University
Title: "The roles of microRNAs in neurodevelopmental disorders"
- 2019-2020 **Inbar Fischer**, Sagol School of Neuroscience, Tel Aviv University
Title: "Elucidating brain regions responsible for social behavior"
- 2021-2023 **Omer Ophir**, Sagol School of Neuroscience, Tel Aviv University
Title: "*Gtf2i* neurobiological functions in postnatal stages"
- 2021-2023 **Omri Kimchi-Feldhorn**, Sagol School of Neuroscience, Tel Aviv University
Title: "The feasibility of a novel potential treatment for developmental myelination disorders"
- 2022-Present **May Rokach**, Sagol School of Neuroscience, Tel Aviv University
Title: "*Gtf2i* roles in modulating remyelination in the mouse brain"
- 2023-Present **Gal Wiener**, Sagol School of Neuroscience, Tel Aviv University
Title: "Postnatal regulation of myelination in Williams syndrome"
- 2023-Present **Sophie Shohat**, School of Psychological Sciences, Tel Aviv University
Title: "Virus-mediated treatment for autism"

Ph.D. students:

- 2018-2023 **Ariel Nir**, Sagol School of Neuroscience, Tel Aviv University
Title: "Characterizing white matter abnormalities in Williams syndrome"
- 2018-2023 **Ela Bar**, Department of Neurobiology, Tel Aviv University (Co-supervision with Prof. Uri Ashery, Dept. of Neurobiology, Tel Aviv University)
Title: "Microglia roles and function in mouse model for Williams syndrome"
- 2019-Present **Gilad Levy**, Sagol School of Neuroscience, Tel Aviv University
Title: "Behavioral and neural characterization of genetic manipulations of *Gtf2i*"
- 2020-Present **Inbar Fischer**, Sagol School of Neuroscience, Tel Aviv University
Title: "Elucidating brain regions responsible for social behavior"
- 2023-Present **Omri Kimchi-Feldhorn**, Sagol School of Neuroscience, Tel Aviv University
Title: "Synaptic proteins' regulation of myelination in autism"

PUBLICATIONS

Published articles

1. Ashery U*, Bielopolski N., **Barak B.** and Yizhar O. (2009). Friends and foes in synaptic transmission—the role of tomosyn in vesicle priming. *Trends in Neurosciences*, 32, 275-282. DOI: [10.1016/j.tins.2009.01.004](https://doi.org/10.1016/j.tins.2009.01.004) (Ranking: Neurosciences, 9/256 Q1; IF=17, Citations=74)
2. Okun E., Griffioen K., **Barak B.**, Roberts N., Castro K., Pita M., Cheng A., Mughal M., Wan R., Ashery U*. and Mattson MP. (2010). Toll-like receptor 3 inhibits memory retention and constrains adult hippocampal neurogenesis. *Proc Natl Acad Sci USA*, 107, 15625-15630. DOI: [10.1073/pnas.1005807107](https://doi.org/10.1073/pnas.1005807107) (Ranking: Multidisciplinary, 4/63 Q1; IF=12.8, Citations=208)
 - Article highlighted in: Kingwell K. (2010). Working memory takes its toll. *Nature Reviews Neuroscience* 11, 664–665
 - Article selected by the faculty of 1000 medicine as among the top 2% of articles published in biology and medicine. Available at: <http://f1000.com/5252959>
3. **Barak B.**, Williams A., Bielopolski N., Gottfried I., Okun E., Brown M., Matti U., Rettig J., Stuenkel E. and Ashery U*. (2011). Tomosyn expression and localization at the sub-areas of the mouse hippocampus. *Frontiers in Neuroanatomy*, 4, 149. DOI: [10.3389/fnana.2010.00149](https://doi.org/10.3389/fnana.2010.00149) (Ranking: Anatomy, 2/21 Q1; IF=3.5, Citations=28)
4. Kwiat M., Elnathan R., Pevzner A., Peretz A., **Barak B.**, Peretz H., Ducobni T., Stein D., Mittelman L., Ashery U*. and Patolsky F. (2012). Highly ordered large-scale neuronal networks of individual cells – Toward single cell to 3D nanowire intracellular interfaces. *ACS Applied Materials & Interfaces*, 4, 3542-3549. DOI: [10.1021/am300602e](https://doi.org/10.1021/am300602e) (Ranking: Materials Science, 14/83 Q1; IF=10.4, Citations=72)
5. Okun E., **Barak B.**, Saada-Madar R., Rothman SM., Griffioen KJ., Roberts N., Castro K., Mughal MR., Pita MA., Stranahan AM., Arumugam TV. and Mattson MP. (2012). Evidence for a developmental role for TLR4 in learning and memory. *PLOS ONE*, 7, 10. DOI: [10.1371/journal.pone.0047522](https://doi.org/10.1371/journal.pone.0047522) (Ranking: Multidisciplinary, 11/63 Q1; IF=4.1, Citations=117)
6. **Barak B.**[^], Okun E.[^], Ben-Simon Y., Wang Y., Norman E., Sheinin A., Pita MA., Yizhar O., Mughal MR., Stuenkel E., van Praag H., Mattson MP. and Ashery U*. (2013). Neuron-specific expression of tomosyn1 in the mouse hippocampal dentate gyrus impairs spatial learning and memory. *NeuroMolecular Medicine*, 15, 351-63. [^]Equally contributed. DOI: [10.1007/s12017-013-8223-4](https://doi.org/10.1007/s12017-013-8223-4) (Ranking: Neurosciences, 75/256 Q1; IF=3.3, Citations=26)
7. **Barak B.**, Shvarts SI., Modai S., Gilam A., Okun E., Michaelson DM., Mattson MP., Shomron N. and Ashery U*. (2013). Opposing actions of environmental enrichment and Alzheimer's disease on the expression of hippocampal microRNAs in mouse models. *Translational Psychiatry*, 10, 304. DOI: [10.1038/tp.2013.77](https://doi.org/10.1038/tp.2013.77) (Ranking: Psychiatry, 16/142 Q1; IF=8, Citations=74)

8. Leitman J., **Barak B.**, Ashery U*, Hartl U. and Lederkremer GZ. (2014). PERK inhibition restores exceptionally low eIF2a phosphorylation in striatal cells and protects against polyQ-expanded huntingtin toxicity. *PLOS ONE*, 9, 90803. DOI: [10.1371/journal.pone.0090803](https://doi.org/10.1371/journal.pone.0090803) (Ranking: Multidisciplinary, 11/63 Q1; IF=3.8, Citations=92)
9. **Barak B.**, Feldman N. and Okun E. (2014). Toll-like receptors as developmental tools that regulate neurogenesis during development: an update. *Frontiers in Neuroscience*, 8, 272. DOI: [10.3389/fnins.2014.00272](https://doi.org/10.3389/fnins.2014.00272) (Ranking: Neurosciences, 88/259 Q1; IF=5.2, Citations=74)
10. **Barak B.**, Feldman N. and Okun E. (2015). Cardiovascular fitness and cognitive spatial learning in rodents and in humans. *Journal of Gerontology: Biological Sciences*, 70, 1059–1066. DOI: [10.1093/gerona/glu162](https://doi.org/10.1093/gerona/glu162) (Ranking: Geriatrics and Gerontology, 4/49 Q1; IF=5.6, Citations=20)
11. **Barak B.** and Feng G*. (2016). Neurobiology of social behavior abnormalities in autism spectrum disorders and Williams syndrome. *Nature Neuroscience*, 19, 647-55. DOI: [10.1038/nn.4276](https://doi.org/10.1038/nn.4276) (Ranking: Neurosciences, 4/256 Q1; IF=28.8, Citations=196)
12. Zhou Y., Kaiser T., Monteiro P., Zhang X., Van der Goes M., Wang D., **Barak B.**, Zeng M., Li C., Lu C., Wells M., Amaya A., Nguyen S., Lewis M., Sanjana N., Zhang M., Zhang F., Fu Z. and Feng G*. (2016). Mice with *Shank3* mutations associated with ASD and schizophrenia display both shared and distinct defects. *Neuron*, 89, 147-62. DOI: [10.1016/j.neuron.2015.11.023](https://doi.org/10.1016/j.neuron.2015.11.023) (Ranking: Neurosciences, 6/271 Q1; IF=18.7, Citations=272)
13. Chen N., Sugihara H., Kim J., Fu Z., **Barak B.**, Sur M., Feng G*. and Han W. (2016). Direct modulation of GFAP-expressing glia in the arcuate nucleus bi-directionally regulates feeding. *eLife*, 5, e18716. DOI: [10.7554/eLife.18716](https://doi.org/10.7554/eLife.18716) (Ranking: Biology, 4/86 Q1; IF=8.7, Citations=110)
14. Monteiro P., **Barak B.**, Zhou Y., McRae R., Wickersham IR. and Feng G*. (2018). Striatum parvalbumin interneurons mediate habit formation. *Journal of Neurophysiology*, 16, 3695–3707. DOI: [10.1113/JP275936](https://doi.org/10.1113/JP275936) (Ranking: Physiology, 37/189 Q1; IF=3, Citations=26)
15. Amal H.^, **Barak B.**^, Gong G., Feng G*. and Tannenbaum SR. (2018). *Shank3* mutation in a mouse model of autism leads to changes in the S-nitroso-proteome and affects key proteins involved in vesicle release and synaptic function. *Molecular Psychiatry*, 10.1038/s41380-018-0113-6. ^**Equally contributed**. DOI: [10.1038/s41380-018-0113-6](https://doi.org/10.1038/s41380-018-0113-6) (Ranking: Psychiatry, 7/142 Q1; IF=13.4, Citations=72)
16. **Barak B.**#, Zhang Z., Liu Y., **Nir A.**, **Trangle SS.**, Ennis M., Levandowski K., Wang D., Quast K., Boulting G., Li Y., Bayarsaihan D., He Z.# and Feng G.*#. (2019). Neuronal deletion of *Gtf2i*, associated with Williams syndrome, causes myelin and behavioral alterations rescuable by a remyelinating drug. *Nature Neuroscience*, 22, 700–708. #**Corresponding author**. DOI: [10.1038/s41593-019-0380-9](https://doi.org/10.1038/s41593-019-0380-9) (Ranking: Neurosciences, 4/256 Q1; IF=28.8, Citations=92)

- Article highlighted in: Osso LA. and Chan JR. (2019). A surprising role for myelin in Williams syndrome. *Nature Neuroscience*, 22, 681-683
- Article highlighted in: Wood H. (2019). Remyelinating drug to the rescue in a Williams syndrome model. *Nature Reviews Neurology*, 15, 368-369
- Article selected by several F1000Prime members:
 - Nave K and Werner H: F1000Prime Recommendation of [Barak B et al., Nat Neurosci 201922(5):700-708]. In F1000Prime, 07 May 2019; [10.3410/f.735590281.793559712](https://doi.org/10.3410/f.735590281.793559712)
 - Reus V: F1000Prime Recommendation of [Barak B et al., Nat Neurosci 2019 22(5):700-708]. In F1000Prime, 07 May 2019; [10.3410/f.735590281.793559490](https://doi.org/10.3410/f.735590281.793559490)
 - Trotter J: F1000Prime Recommendation of [Barak B et al., Nat Neurosci 2019 22(5):700-708]. In F1000Prime, 20 May 2019; [10.3410/f.735590281.793560015](https://doi.org/10.3410/f.735590281.793560015)
 - Hollander E and Uzunova G: F1000Prime Recommendation of [Barak B et al., Nat Neurosci 2019 22(5):700-708]. In F1000Prime, 31 May 2019; [10.3410/f.735590281.793560676](https://doi.org/10.3410/f.735590281.793560676)
 - Popko B and Elbaz B: Faculty Opinions Recommendation of [Barak B et al., Nat Neurosci 2019 22(5):700-708]. In Faculty Opinions, 09 Mar 2021; [10.3410/f.735590281.793583179](https://doi.org/10.3410/f.735590281.793583179)

17. **Bar E.** and **Barak B.**[#]. (2019). Microglia roles in synaptic plasticity and myelination in homeostatic conditions and neurodevelopmental disorders. *GLIA*, 67, 2125-2141. **#Corresponding author**. Invited review. DOI: [10.1002/glia.23637](https://doi.org/10.1002/glia.23637) (Ranking: Neurosciences, 35/267 Q1; IF=8.1, Citations=74)
- Article was among the top 10% most downloaded papers in *GLIA* among work published between January 2018 and December 2019
18. Du J., Simmons S., Brunklaus A., Adiconis X., Hession CC., Fu Z., Li Y., Shema R., Møller RS., **Barak B.**, Feng G*, Dimidschstein J., Pan JQ., Meisler M., Cottrell JR., Sanders S., Lerche H., Campbell AJ., McCarroll S., Nürnberg P., Daly MJ., Palotie A., Levin JZ. and Lal D. (2019). Differential excitatory/inhibitory expression of sodium channels in the brain – findings from human and mouse single-cell transcriptome. *European Journal of Paediatric Neurology*. S1090-3798(19)30439-8. DOI: [10.1016/j.ejpn.2019.12.019](https://doi.org/10.1016/j.ejpn.2019.12.019) (Ranking: Medicine, 480/2,489 Q1; IF=3.7, Citations=15)
19. Ding J., Adiconis X., Simmons SK., Kowalczyk MS., Hession CC., Marjanovic ND., Hughes TK., Wadsworth MH., Burks T., Nguyen LT., Chatterjee M., Kwon JYH., **Barak B.**, Kedaigle AJ., Carroll S., Ratner A., Li S., Boswell SA., Hacohen N., Rozenblatt-Rosen O., Shalek AK., Villani AC., Regev A. and Levin JZ. (2020). Systematic comparative analysis of single cell RNA-sequencing methods. *Nature Biotechnology*, 38, 737–746. DOI: <https://doi.org/10.1038/s41587-020-0465-8> (Ranking: Applied microbiology and biotechnology, 2/156 Q1; IF=68, Citations=526)

20. Gong X., Mendoza-Halliday D., Ting JT., Kaiser T., Sun X., Bastos AM., Wimmer RD., Guo B., Chen Q., Zhou Y., Pruner M., Wu C., Park D., Deisseroth K., **Barak B.**, Boyden ES., Miller EK., Halassa MM., Fu Z., Bi G., Desimone R. and Feng G*. (2020). An ultra-sensitive step-function opsin for minimally invasive optogenetic stimulation in mice and macaques. *Neuron*, 107(1): 38–51.e8. DOI: [10.1016/j.neuron.2020.03.032](https://doi.org/10.1016/j.neuron.2020.03.032) (Ranking: Neurosciences, 6/271 Q1; IF=19, Citations=119)
21. Nir A. and **Barak B.**#. (2020). White matter alterations and social impairments in Williams syndrome. *GLIA*, 69, 5-19. #**Corresponding author**. DOI: [10.1002/glia.23868](https://doi.org/10.1002/glia.23868). (Ranking: Neurosciences, 32/271 Q1; IF=8.1, Citations=19)
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