Boaz Barak

Associate Professor

Association: School of Psychological Sciences and Sagol School of Neuroscience, Tel Aviv University, Israel

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Birth date & place: November 10th, 1981, Belgium

EDUCATION

2019-2021 **M.B.A., Global M.B.A.** // Tel Aviv University, Israel

2007-2012 **Ph.D., Neurobiology** // Tel Aviv University, Israel

2004-2007 **B.Sc. (*Magna Cum Laude*), Biology** // Tel Aviv University, Israel

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 & PROFESSIONAL EXPERIENCE

2022-Present **Associate Professor**
School of Psychological Sciences and the Sagol School of Neuroscience // Tel Aviv University, Israel

2017-2022 **Assistant Professor, Senior Lecturer**
School of Psychological Sciences and the Sagol School of Neuroscience // Tel Aviv University, Israel

2012-2017 **Postdoctoral Fellow**
The laboratory of Prof. Guoping Feng, Department of Brain and Cognitive Sciences // Massachusetts Institute of Technology (MIT), USA

2009 **Research Assistant**
The National Institute on Aging // NIH, USA

2007 **Research Assistant**
The Division of Neurobiology // Berkeley University of California, USA

2006-2007 **Research Assistant**
The Department of Neurobiology // Weizmann Institute of Science, Israel

ACADEMIC ROLES

2023-Present **Head of the clinical neuroscience program**
Sagol school of neuroscience // Tel Aviv University, Israel

2022-Present **Member of the university invention and patent committee**
Tel Aviv University, Israel

2021-Present **Head of the psychobiology department**
The School of Psychological Sciences // Tel Aviv University, Israel

2020-2023 **Head and founder of the international M.Sc. program in neuroscience**
Sagol school of neuroscience // Tel Aviv University, Israel

2018-2023 **Director and founder of "Brain and Mind Disorders" hub at BiomedTAU**
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

2018-2021 **Member of the institutional animal care and use committee (IACUC)**
Tel Aviv University, Israel

TEACHING ROLES

2017-Present **Lecturer** // Tel Aviv University, Israel
"Myelin and White Matter: From Structure to Function"
"Introduction to Cell Biology"
"Neurobiology of Neurogenetics Syndromes"
"Research Methods in Physiological Psychology"
"Introduction to Neuroscience"

2016,2017 **Guest Lecturer** // Massachusetts Institute Of Technology (MIT), USA
"Genes, Circuits and Behavior" for undergraduate students

2008-2011 **Teaching Assistant** // Tel Aviv University, Israel
"Introduction to Neurobiology" for undergraduate students

ORGANISATION OF SCIENTIFIC MEETINGS

2026 **Session chair**
The annual conference of The Israel Society of Biological Psychiatry (ISBP) //Hagoshrim, Israel

2026 **Session chair**
The Federation of the Israel Societies for Experimental Biology Conference //Eilat, Israel

2025 **Session chair**
The annual conference of The Israel Society of Biological Psychiatry (ISBP) //Jerusalem, Israel

2025 **Session chair**
The annual meeting of the Israel Society for Neuroscience (ISFN) // Eilat, Israel

2024 **Session chair**
9th Biennial Molecular Psychiatry Association meeting // Hawaii, USA

2023 **Session chair**
Annual meeting of the Israeli Society for Biological Psychiatry (ISBP) // Kfar Blum, Israel

2019,2020 **Meeting organizer, Scientific committee member & Session chair**
Annual meeting of the Israeli Society for Biological Psychiatry // 400 participants // Israel

2019 **Meeting organizer**
Sagol School of Neuroscience annual meeting // 150 participants // Nazareth, Israel

2018 **Symposium organizer**
Child health symposium // 200 participants // Tel Aviv University, Israel

2018 **Session chair**
Annual meeting of the Israeli Society for Biological Psychiatry (ISBP) // Kfar Blum, Israel

2017 **Session chair**
The annual meeting of the Israel Society for Neuroscience (ISFN) // Eilat, Israel

ACTIVE PARTICIPATION IN SCIENTIFIC MEETINGS

Oral Presentations

2026 **Invited speaker, Oral presentation**
Israeli Meeting for Autism Research // Beer Sheva, Israel
Autism and myelination: Insights into cellular and molecular dysfunction.

2026 **Invited speaker, Oral presentation**
Social Neuroscience Discovery Day // Haifa, Israel
Myelination dysfunction in neurodevelopmental disorders: mechanisms and therapeutic targets.

2025 **Oral presentation**
Israeli Society of Pediatric Neurology & Development // Zichron Yaakov, Israel
White matter and myelin deficits in autism: Clinical relevance of Shank3 and mechanistic pathways.

2025 **Invited speaker, Oral presentation**
The International Conference on Research in Williams Syndrome // Philadelphia, PA USA
From gene to therapy: Gtf2i, myelination, and brain development in Williams syndrome.

2025 **Invited speaker, Oral presentation**
Mediterranean Neuroscience Society Conference // Crete, Greece
Shank3 and Myelination Dysfunction in Autism: Exploring Oligodendrocyte Roles.

2025 **Session chair, Oral presentation**
The annual meeting of the Israel Society for Neuroscience (ISFN) // Eilat, Israel
The roles of altered neuron-glia interaction and myelination properties in hypersociability.

2025 **Oral presentation**
The Israeli Meeting for Autism Research (I-MAR) // Beer Sheba, Israel
Shank3 mutation impairs glutamate signaling and myelination in autism spectrum disorder models.

2024 **Invited speaker, Oral presentation**
Current Topics in Myelin Research symposium // Kassel-Wilhelmshone, Germany
Myelination disruptions in neurodevelopmental disorders.

2024 **Oral presentation**
Israeli Society of Pediatric Neurology & Development // Caesarea, Israel
Neuroglial mechanisms of myelination in Williams syndrome: Insights from Gtf2i deletion and neurological impacts.

2024 **Invited speaker, Oral presentation**
Williams Syndrome Association national convention // Phoenix, AZ USA
Neuroscience research updates on Williams syndrome: From basic science to clinical trials.

2024 **Invited speaker, Oral presentation**
National conference on Williams syndrome // Paris, France
Williams syndrome – research updates.

2024 **Invited speaker, Oral presentation**
International Conference "Moving Forward with Williams Syndrome" // Geneva, Switzerland
Updates on emerging neurobiological insights into Williams syndrome.

2024 **Invited speaker, Oral presentation**
Gordon Research Conference (GRC): Myelin // Ventura, CA USA
Shank3 mutation impairs oligodendroglial glutamatergic properties and myelin development in ASD.

2024 **Session chair, Oral presentation**
Biennial Molecular Psychiatry Association meeting // Hawaii, USA
Shank3's novel involvement in myelination deficits linked to autism.

2023 **Invited speaker, Oral presentation**
American Academy of Child and Adolescent Psychiatry annual meeting // New York city, USA
Symptomatic and mechanism-based treatments for neuropsychiatric symptoms in Williams syndrome.

2023 **Invited speaker, Oral presentation**
ISN-ESN Meeting // Porto, Portugal
Novel mechanistic insights on myelination regulation in health and illness.

2023 **Oral presentation**
15th Biennial ISN Satellite meeting on myelin biology // Baiao, Portugal
Novel mechanism for myelination regulation.

2023 **Session chair, Oral presentation**
Annual meeting of the Israeli Society for Biological Psychiatry // Kfar Blum, Israel
Myelination deficits in Williams syndrome: From the bench to the bedside.

2023 **Invited speaker, Oral presentation**
Outsourcing in Clinical Trials & Clinical Trial Supply Israel 2023 // Tel Aviv, Israel
From bench to bedside: taking a drug from the lab to a clinic to treat Williams Syndrome.

2022 **Invited speaker, Oral presentation**
International Conference on Williams Syndrome // Rome, Italy
New neurobiological insights in our understanding of Williams syndrome.

2020 **Invited speaker, Oral presentation**
Clinical Trials in Rare Diseases: A Virtual Event // Online conference
From bench to bedside: taking a drug from the lab to a clinic to treat Williams Syndrome.

2020 **Invited speaker, Oral presentation**
The 8th international meeting of the Integrated Brain and Behavior Research Center (IBBRC) // Haifa, Israel // *How can neuron-glia interactions modulate social behavior in a neurodevelopmental disorder?*

2020 **Invited speaker, Oral presentation**
The annual meeting of the Israel Society for Neuroscience (ISFN) // Eilat, Israel
The roles of altered neuron-glia interaction and myelination properties in hypersociability.

2020 **Invited speaker, Oral presentation**
Humboldt Kolleg Meeting // Eilat, Israel
Neuron-glia interaction, myelination and behavior: how are they all intertwined.

2019 **Session chair, Oral presentation**
Annual meeting of the Israeli Society for Biological Psychiatry (ISBP) // Kfar Blum, Israel *Neuron-glia interactions modulation of social behavior in Williams syndrome.*

2018 **Invited speaker, Oral presentation**
Child health symposium // Tel Aviv, Israel
Altered myelination as a novel pathophysiological approach in Williams syndrome.

2018 **Invited speaker, Oral presentation**

Stability and plasticity of neural circuits symposium // Tel Aviv, Israel
Altered neuron-glia interactions affect myelination and social behavior in Williams syndrome.

2018 **Session chair, Oral presentation**
Annual meeting of the Israeli Society for Biological Psychiatry (ISBP) // Kfar Blum, Israel *Myelination deficits as novel pathophysiological findings in Williams syndrome.*

2018 **Invited speaker, Oral presentation**
Justen Passwell Memorial Symposium // Weizmann Institute of Science, Rehovot, Israel *Altered neuron-glia interactions as a novel pathophysiological approach in Williams syndrome.*

2017 **Session Chair, Oral presentation**
The annual meeting of the Israel Society for Neuroscience (ISFN) // Eilat, Israel
Altered neuron-glia interactions as a novel pathophysiological approach in Williams syndrome.

2016 **Invited speaker, Oral presentation**
Molecular Psychiatry Association Annual meeting // Hawaii, USA
Functional and structural study of Gtf2i-deletion in forebrain excitatory neurons as a mouse model for Williams syndrome.

2015 **Oral presentation**
The annual meeting of the Israel Society for Neuroscience (ISFN) // Eilat, Israel
Gtf2i-deletion alters social behavior, the transcriptome and the neuronal and cortical properties throughout development in a novel mouse model for Williams syndrome.

2010 **Oral presentation**
The annual meeting of the Israel Society for Neuroscience (ISFN) // Eilat, Israel
Elucidating the interplay between synaptic proteins, microRNAs, and cognitive conditions.

2009 **Oral presentation**
The annual meeting of the Israel Society for Neuroscience (ISFN) // Eilat, Israel
Impaired learning and memory after tomosyn overexpression in the dentate gyrus of the mouse hippocampus.

INVITED LECTURES AND SEMINARS

2026 **Invited speaker, Oral presentation**
Biotechnology and Food Engineering Faculty, Technion // Haifa, Israel
Myelination beyond development: glial contributions to brain dysfunction.

2026 **Invited speaker, Oral presentation**
Pediatric Neuro Muscular Clinic, Wolfson Medical Center // Holon, Israel
Neurodevelopmental disorder and myelin.

2025 **Invited speaker, Oral presentation**
Department of Physiology and Cell Biology, Ben-Gurion University of the Negev // Beer-Sheba, Israel
From genes to glia: Myelination deficits across neurodevelopmental disorders.

2025 **Invited speaker, Oral presentation**
Penn Medicine, University of Pennsylvania // Philadelphia, PA USA
How do myelination abnormalities affect neurodevelopmental disorders?

2025 **Invited speaker, Oral presentation**
Department of Medical Neurobiology in HUJI University // Jerusalem, Israel
Glial and myelin pathology in neurodevelopmental disorders.

2024 **Invited speaker, Oral presentation**
Perelman School of Medicine, University of Pennsylvania // Philadelphia, PA USA
Unraveling Williams Syndrome: Translating Basic Neurobiology from Mouse Models to Clinical Insights.

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

2021 **Invited speaker, Oral presentation**
Department of Neurobiology in Haifa University // Haifa, Israel
What can we learn from neuron-glia interaction and myelination in neurodevelopmental disorders?

2021 **Invited speaker, Oral presentation**
Weizmann Institute of Science, Department of Brain Sciences // Rehovot, Israel
Neuron-glia interactions in neurodevelopmental disorders: from basic research to clinical trial.

2021 **Invited speaker, Oral presentation**
Sheba Medical Center // Ramat Gan, Israel
Updates on Phelan McDermid syndrome basic research.

2021 **Invited speaker, Oral presentation**
Institute for Drug Research seminar // Jerusalem, Israel
How can neurons mediate myelination and behavioral properties?

2020 **Invited speaker, Oral presentation**
The Medicine & Humanities Interdisciplinary Colloquium, Tel Aviv University // Tel Aviv, Israel
Neurons, glia and social behavior.

2020 **Invited speaker, Oral presentation**
The Gonda Brain Research Center, Bar-Ilan University // Ramat Gan, Israel
Neuronal modulation of myelination and social behavior.

2019 **Invited speaker, Oral presentation**
Institute for Biological Research // Nes Tziona, Israel
The role of neuronal Gtf2i in moderating myelination and behavior in mice.

2019 **Invited speaker, Oral presentation**
The Division of Neurology, Tel Aviv Sourasky Medical Center // Tel Aviv, Israel
Genetic neurodevelopmental disorders and behavioral alterations.

2019 **Invited speaker, Oral presentation**
Department of Neurobiology in Haifa University // Haifa, Israel
Neuro-glia interactions in myelination.

2019 **Invited speaker, Oral presentation**
Life and Health Sciences Research Institute, Minho University // Braga, Portugal
How myelin can modulate behavioral alterations?

2019 **Invited speaker, Oral presentation**
Italian Institute of Technology // Genova, Italy
Pharmacological aspects in neurodevelopmental disorders.

2019 **Invited speaker, Oral presentation**
Feinstein Institute for Medical Research // New York, USA
The neurobiological mechanisms related to neurodevelopmental disorders.

2018 **Invited speaker, Oral presentation**
The Sagol Center for Hyperbaric Medicine and Research in Assaf Harofeh Medical Center // Beer Yaakov, Israel //
Shank3 as a monogenic cause of autism.

2018 **Invited speaker, Oral presentation**
Zlotowski seminar // Beer Sheba, Israel // *Neurogenetics of social behavior abnormalities.*

2017 **Invited speaker, Oral presentation**
Edmond & Lily Safra Center for Brain Sciences // Jerusalem, Israel
Myelination and hypersociability in Williams syndrome.

ACADEMIC AND PROFESSIONAL AWARDS AND FELLOWSHIPS (SELECTED OUT OF 19)

2024 **Best basic researcher award** // The Israeli Rare Diseases Coalition

2024 **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

2022 **Excellence in teaching** // Senior faculty "Club 100": One of the 100 outstanding lecturers

2022 **Excellence Award** // Federation of European Biochemical Societies (FEBS)

2022 **Young Investigator Award** // European Society for Neurochemistry (ESN)

2018 **Alon Fellowship for outstanding young faculty** // The Israeli Council for Higher Education

2014 **Post-Doctoral Fellowship** // Autism Science Foundation

2013 **Postdoctoral Fellowship** // Simons Center for Social Brain, MIT

2011 **Scholarship for young promising researchers** // Dan David Prize

2008 **Award for excellent achievements in teaching, research and studies** // Tel Aviv University

ACADEMIC REVIEW AND EDITORIAL RESPONSIBILITIES

Ad Hoc Reviewer Journals *(BY ABC ORDER)*

Acta Neuropathologica Communications // Acta Psychologica // **Aging Cell** // Annals Of Behavioral Neuroscience // Applied Neuropsychology: Child // Archives Of Pharmacal Research // Autism: International Journal Of Research And Practice // Autism Research // Behavior and Immunity // Behavioural Brain Research // Bioinformatics // **Biological Psychiatry** // Biological Psychiatry: Cognitive Neuroscience and Neuroimaging // Biomedicine And Pharmacotherapy // Biomedicines // Biomolecules // **Brain** // Brain And Behavior // Brain Research // Brain Research Bulletin // Brain Sciences // **Cell Reports** // Cells // Cellular & Molecular Biology Letters // Children // **Current Opinion In Neurobiology** // Current Pediatric Reviews // Developmental Neurobiology // Diagnostics // **eLife** // Epilepsy // Experimental Neurology // Frontiers In Neurology // Genes // Genetics In Medicine // International Journal Of Developmental Disabilities // International Journal Of Environmental Research And Public Health // International Journal Of Molecular Sciences // iScience // Journal Of Clinical Medicine // Journal of Gerontology: Biological Sciences // Journal Of Neurochemistry // Journal Of Neuroscience Methods // Medicine // Molecular Autism // **Molecular Psychiatry** // **Nature Communications** // Neural Plasticity // Neural Regeneration Research // Neurobiology of Disease // Neurochemical Research // NeuroMarkers // Neuromolecular Medicine // **Neuron** // Neuroscience // Nutrients // Plos One // Research in Autism // Research in Autism Spectrum Disorders // **Science Advances** // The Cerebellum // World Journal Of Clinical Pediatrics // World Journal Of Psychiatry

Grants Applications Reviewer *(BY ABC ORDER)*

Agence Nationale de la Recherche (ANR) // Binational Science Foundation (BSF) // German-Israeli Foundation (GIF) // Israel Science Foundation (ISF, reviewer and panel member) // National Science Centre Poland // The National Institute for Psychobiology in Israel (NIPI) // UK Research and Innovation (UKRI)

Journal Editorial Board *(BY ABC ORDER)*

Advanced Drug Delivery Reviews (Guest editor) // Annals of Behavioral Neuroscience Journal // Biology Journal // Journal of Visualized Experiments – JoVE (Guest editor)

SUPERVISION OF GRADUATE STUDENTS

M.Sc. Students:

2025-Present **Gil Gross** // The department of Neurobiology, Tel Aviv University
Title: "Exploring the interplay between myelination and alcohol addiction"

2025-Present **Shay Alon** // Sagol School of Neuroscience, Tel Aviv University
Title: "Elucidating novel mechanism to mediate myelination in Williams syndrome"

2024-Present **May Elboim** // Sagol School of Neuroscience, Tel Aviv University
Title: "Antibodies as a novel therapeutic approach in neurodevelopmental disorders"

2024-Present **Naama Harrari-Uzan** // Sagol School of Neuroscience , Tel Aviv University
Title: "Developing novel method to dissect underrepresented phenotypes in neurodevelopmental disorders"

2024-Present **Tal Cohen** // The School of Psychological Sciences, Tel Aviv University
Title: "Assessing the impact of Clemastine in a clinical study on Williams syndrome patients"

2024-2025 **Avital Baluk** // Sagol School of Neuroscience, Tel Aviv University
Title: "*Shank3* modification and myelination deficits in autism"

2023-2024 **Sophie Shohat** // The department of Neurobiology, Tel Aviv University
Title: "Virus-mediated treatment for autism"

2023-2024 **Gal Wiener** // Sagol School of Neuroscience, Tel Aviv University
Title: "Postnatal regulation of myelination in Williams syndrome"

2022-2024 **May Rokach** // Sagol School of Neuroscience, Tel Aviv University
Title: "*Gtf2i* roles in modulating remyelination in the mouse brain"

2021-2023 **Omri Kimchi-Feldhorn** // Sagol School of Neuroscience, Tel Aviv University
Title: "The feasibility of a novel potential treatment for developmental myelination disorders"

2021-2023 **Omer Ophir** // Sagol School of Neuroscience, Tel Aviv University
Title: "*Gtf2i* neurobiological functions in postnatal stages"

2019-2020 **Inbar Fischer** // Sagol School of Neuroscience, Tel Aviv University
Title: "Elucidating brain regions responsible for social behavior"

2018-2020 **Meitar Grad** // Sagol School of Neuroscience, Tel Aviv University
Title: "The roles of microRNAs in neurodevelopmental disorders"

2017-2018 **Ariel Nir** // Sagol School of Neuroscience, Tel Aviv University
Title: "Characterizing white matter abnormalities in Williams syndrome"

Ph.D. Students:

2025-Present **Avital Baluk** // Sagol School of Neuroscience, Tel Aviv University
Title: "Oligodendrocytes precursor cells properties in health and illness along aging"

2024-Present **Sophie Shohat** // The department of Neurobiology, Tel Aviv University
Title: "Physiological deficits in oligodendrocytes in autism"

2024- Present **Gal Wiener** // Sagol School of Neuroscience, Tel Aviv University
Title: "Postnatal regulation of myelination in Williams syndrome"

2020-2025 **Inbar Fischer** // Sagol School of Neuroscience, Tel Aviv University
Title: "Elucidating brain regions responsible for social behavior"

2019-2025 **Gilad Levy** // Sagol School of Neuroscience, Tel Aviv University
Title: "Behavioral and neural characterization of genetic manipulations of *Gtf2i*"

2018-2023 **Ela Bar** // Department of Neurobiology, Tel Aviv University
Title: "Microglia roles and function in mouse model for Williams syndrome"

2018-2023 **Ariel Nir** // Sagol School of Neuroscience, Tel Aviv University
Title: "Characterizing white matter abnormalities in Williams syndrome"

PATENTS

Compositions and Methods for Williams Syndrome (WS) Therapy. U.S. Application No. 62/610,063

PUBLICATIONS

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 (Ranking: Neurosciences, 9/256 Q1; IF=17, Citations=75)

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 (Ranking: Multidisciplinary, 4/63 Q1; IF=12.8, Citations=219)
    - 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 (Ranking: Anatomy, 2/21 Q1; IF=3.5, Citations=31)

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 (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 (Ranking: Multidisciplinary, 11/63 Q1; IF=4.1, Citations=125)

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 (Ranking: Neurosciences, 75/256 Q1; IF=3.3, Citations=31)

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 (Ranking: Psychiatry, 16/142 Q1; IF=8, Citations=82)

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 (Ranking: Multidisciplinary, 11/63 Q1; IF=3.8, Citations=103)

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 (Ranking: Neurosciences, 88/259 Q1; IF=5.2, Citations=83)

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 (Ranking: Geriatrics and Gerontology, 4/49 Q1; IF=5.6, Citations=23)

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 (Ranking: Neurosciences, 4/256 Q1; IF=28.8, Citations=233)

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 (Ranking: Neurosciences, 6/271 Q1; IF=18.7, Citations=310)

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 (Ranking: Biology, 4/86 Q1; IF=8.7, Citations=119)

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 (Ranking: Physiology, 37/189 Q1; IF=3, Citations=33)

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 (Ranking: Psychiatry, 7/142 Q1; IF=13.4, Citations=85)

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 (Ranking: Neurosciences, 4/256 Q1; IF=28.8, Citations=116)
    - 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
        - 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
        - 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

- 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
- 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

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 (Ranking: Neurosciences, 35/267 Q1; IF=8.1, Citations=91)
    - 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 (Ranking: Medicine, 480/2,489 Q1; IF=3.7, Citations=21)

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