

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

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

2025	Oral presentation Israeli Society of Pediatric Neurology & Development // Zichron Yaakov, Israel <i>White matter and myelin deficits in autism: Clinical relevance of Shank3 and mechanistic pathways.</i>
2025	Invited speaker, Oral presentation The International Conference on Research in Williams Syndrome // Philadelphia, PA USA <i>From gene to therapy: Gtf2i, myelination, and brain development in Williams syndrome.</i>
2025	Invited speaker, Oral presentation Mediterranean Neuroscience Society Conference // Crete, Greece <i>Shank3 and Myelination Dysfunction in Autism: Exploring Oligodendrocyte Roles.</i>

- 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.

Poster Presentations

- 2022 **Poster presentation**
Cold Spring Harbor Laboratory, Glia in Health & Disease // CSHL, NY, USA
Gtf2i deletion from myelinating glia induces hypermyelination and behavioral alterations in a mouse model related to Williams syndrome.
- 2022 **Poster presentation**
Gordon Research Conference (GRC) on Myelin // Lucca, Italy
Gtf2i deletion from myelinating glia induces hypermyelination and behavioral alterations in a mouse model related to Williams syndrome.
- 2015 **Poster presentation**
Champalimaud neuroscience symposium // Lisbon, Portugal
Gtf2i-deletion affects social behavior, neuronal morphology and the transcriptome in a novel mouse model for Williams syndrome.
- 2012 **Poster presentation**
Brain Plasticity Symposium // Tel Aviv University, Israel
Neuron-specific expression of tomosyn1 in the mouse hippocampal dentate gyrus impairs spatial learning and memory.
- 2012 **Poster presentation**
Synthesis, degradation and localization of molecules and neuronal structures in learning and memory processes international conference // Haifa, Israel
Neuron-specific expression of tomosyn1 in the mouse hippocampal dentate gyrus impairs spatial learning and memory.
- 2011 **Poster presentation**
Measuring Behavior and Physiology conference // Rehovot, Israel.
Impaired learning and memory after tomosyn overexpression in the dentate gyrus of the mouse hippocampus.

- 2010 **Poster presentation**
Annual meeting of the International Behavioral Neuroscience Society // Sardinia, Italy.
Impaired learning and memory after tomosyn overexpression in the dentate gyrus of the mouse hippocampus.
- 2010 **Poster presentation**
Mechanisms of Exocytosis Ca²⁺ Channels, GPCRs and Intracellular Ca²⁺ Binding Proteins international meeting // Jerusalem, Israel.
Enriched environment effects on synaptic proteins expression in the mouse hippocampus.

INVITED LECTURES AND SEMINARS

- 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 // **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** // 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** // 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 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) // 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: " <i>Gtf2i</i> 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 <i>Gtf2i</i> "
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](https://doi.org/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](https://doi.org/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](https://doi.org/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](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=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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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](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)
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