

## ELSC Member's Publications: July - December 2022

### Adi Mizrahi

1. Tasaka GI, Maggi C, Taha E, **Mizrahi A**. The local and long-range input landscape of inhibitory neurons in mouse auditory cortex. *Journal of Comparative Neurology*. 2022 Dec 1.

### Alexander Binshtok

2. Caspi Y, Mazar M, Kushnir Y, Mazor Y, Katz B, Lev S, **Binshtok AM**. Structural plasticity of axon initial segment in spinal cord neurons underlies inflammatory pain. *Pain*. 2022 Nov 29. doi: 10.1097/j.pain.0000000000002829. Epub ahead of print. PMID: 36645177.
3. Wong C, Barkai O, Wang F, Perez CT, Lev S, Cai W, Tansley S, Yousefpour N, Hooshmandi M, Lister KC, Latif M, Cuello AC, Prager-Khoutorsky M, Mogil JS, Séguéla P, De Koninck Y, Ribeiro-da-Silva A, **Binshtok AM**, Khoutorsky A. mTORC2 mediates structural plasticity in distal nociceptive endings that contributes to pain hypersensitivity following inflammation. *J Clin Invest*. 2022 Aug 1; 132(15):e152635. doi: 10.1172/JCI152635. PMID: 35579957; PMCID: PMC9337825.

### Aviv Mezer

4. Berman S, Drori E, **Mezer AA**. Spatial profiles provide sensitive MRI measures of the midbrain micro- and macrostructure. *Neuroimage*. 2022 Dec 1;264:119660. doi: 10.1016/j.neuroimage.2022.119660. Epub 2022 Oct 8. PMID: 36220534.
5. Drori E, Berman S, **Mezer AA**. Mapping microstructural gradients of the human striatum in normal aging and Parkinson's disease. *Sci Adv*. 2022 Jul 15;8(28):eabm1971. doi: 10.1126/sciadv.abm1971. Epub 2022 Jul 15. PMID: 35857492; PMCID: PMC9286505.
6. Brignoni-Pérez E, Dubner SE, Ben-Shachar M, Berman S, **Mezer AA**, Feldman HM, Travis KE. White matter properties underlying reading abilities differ in 8-year-old children born full term and preterm: A multi-modal approach. *Neuroimage*. 2022 Aug 1;256:119240. doi: 10.1016/j.neuroimage.2022.119240. Epub 2022 Apr 28. PMID: 35490913; PMCID: PMC9213558.

### Baruch Minke

- Katz B, Zaguri R, Edvardson S, Maayan C, Elpeleg O, Lev S, Davidson E, Peters M, Kfir-Erenfeld S, Berger E, Ghazalin S, Binshtok AM, **Minke B**. Nociception and pain in humans lacking functional TRPV1 channel. *J Clin Invest*. 2022 Dec 1:e153558. doi: 10.1172/JCI153558. Epub ahead of print. PMID: 36454632.
7. **Minke B**, Pak WL. The light-activated TRP channel: the founding member of the TRP channel superfamily. *J Neurogenet*. 2022 Mar-Jun;36(2-3):55-64. doi: 10.1080/01677063.2022.2121824. Epub 2022 Oct 10. PMID: 36217603.

### Chaya Kalcheim

8. Kalcheim C, Rekler D. Recent advances in understanding cell type transitions during dorsal neural tube development. *Fac Rev*. 2022 Sep 27;11:27. doi: 10.12703/r/11-27. PMID: 36225209; PMCID: PMC9523542.

### David (Didi) Omer

9. **Omer DB**, Las L, Ulanovsky N. Contextual and pure time coding for self and other in the hippocampus. *Nat Neurosci*. 2022 Dec 30. doi: 10.1038/s41593-022-01226-y. Epub ahead of print. PMID: 36585486.

### Eran Meshorer

10. Sorek M, **Meshorer E**, Schlesinger S. Impaired activation of transposable elements in SARS-CoV-2 infection. *EMBO reports*. 2022 Sep 5;23(9):e55101.
11. Cohen LR, Kaffe B, Deri E, Leibson C, Nissim-Rafinia M, Maman M, Harpaz N, Ron G, Shema E, **Meshorer E**. PRC2-independent actions of H3. 3K27M in embryonic stem cell differentiation. *Nucleic acids research*. 2022 Sep 26.
12. Viegas JO, Azad GK, Lv Y, Fishman L, Paltiel T, Pattabiraman S, Park JE, Kaganovich D, Sze SK, Rabani M, Esteban MA, **Meshorer E**. RNA degradation eliminates developmental transcripts during murine embryonic stem cell differentiation via CAPRIN1-XRN2. *Dev Cell*. 2022 Dec 19;57(24):2731-2744.e5. doi: 10.1016/j.devcel.2022.11.014. Epub 2022 Dec 9. PMID: 36495875; PMCID: PMC9796812.

### Hagai Bergman

13. Ma W, Li M, Wu J, Zhang Z, Jia F, Zhang M, **Bergman H**, Li X, Ling Z, Xu X. Multiple step saccades in simply reactive saccades could serve as a complementary biomarker for the early diagnosis of Parkinson's disease. *Frontiers in Aging Neuroscience*. 2022;14.
14. Oz O, Matityahu L, Mizrahi-Kliger A, Kaplan A, Berkowitz N, Tiroshi L, **Bergman H**, Goldberg JA. Non-uniform distribution of dendritic nonlinearities differentially engages thalamostriatal and corticostriatal inputs onto cholinergic interneurons. *Elife*. 2022 Jul 11;11:e76039.
15. Erdman HB, Kornilov E, Kahana E, Zarchi O, Reiner J, Socher A, Strauss I, Firman S, Israel Z, **Bergman H**, Tamir I. Asleep DBS under ketamine sedation: Proof of concept. *Neurobiology of Disease*. 2022 Aug 1;170:105747.
16. Mizrahi-Kliger AD, Kaplan A, Israel Z, **Bergman H**. Entrainment to sleep spindles reflects dissociable patterns of connectivity between cortex and basal ganglia. *Cell Reports*. 2022 Sep 20;40(12):111367.

### Haim Sompolinsky

17. Steinberg J, **Sompolinsky H**. Associative memory of structured knowledge. *Scientific Reports*. 2022 Dec 17;12(1):21808.
18. Shan H, **Sompolinsky H**. Minimum perturbation theory of deep perceptual learning. *Physical Review E*. 2022 Dec 12;106(6):064406.
19. Sorscher B, Ganguli S, **Sompolinsky H**. Neural representational geometry underlies few-shot concept learning. *Proceedings of the National Academy of Sciences*. 2022 Oct 25;119(43):e2200800119.
20. Cohen U, **Sompolinsky H**. Soft-margin classification of object manifolds. *Physical Review E*. 2022 Aug 24;106(2):024126.
21. Shaham N, Chandra J, Kreiman G, **Sompolinsky H**. Stochastic consolidation of lifelong memory. *Scientific Reports*. 2022 Jul 30;12(1):13107.
22. **Sompolinsky H**. The spectrum of covariance matrices of randomly connected recurrent neuronal networks with linear dynamics. *PLoS Computational Biology*. 2022 Jul 1;18(7):e1010327.

### Hermona Soreq

23. Winek K, Tzur Y, **Soreq H**. Biological underpinnings of sex differences in neurological disorders. *Sex and Gender Differences in Neurological Disease*. 2022 Jul 30:27.

24. Pallier PN, Ferrara M, Romagnolo F, Ferretti MT, **Soreq H**, Cerase A. Chromosomal and environmental contributions to sex differences in the vulnerability to neurological and neuropsychiatric disorders: Implications for therapeutic interventions. *Progress in Neurobiology*. 2022 Sep 12:102353.
25. Eikelis N, Dixon JB, Lambert EA, Hanin G, Tzur Y, Greenberg DS, **Soreq H**, Marques FZ, Fahey MT, Head GA, Schlaich MP. MicroRNA-132 may be associated with blood pressure and liver steatosis—preliminary observations in obese individuals. *Journal of Human Hypertension*. 2022 Oct;36(10):911-6.
26. Lackie RE, de Miranda AS, Lim MP, Novikov V, Madrer N, Karunatileke NC, Rutledge BS, Tullo S, Brickenden A, Maitland MER, Greenberg D, Gallino D, Luo W, Attaran A, Schlaifer I, Del Cid Pellitero E, Schild-Poulter C, Durcan TM, Fon EA, Duennwald M, Beraldo FH, Chakravarty MM, Bussey TJ, Saksida LM, **Soreq H**, Choy WY, Prado VF, Prado MAM. Stress-inducible phosphoprotein 1 (HOP/ST11/STIP1) regulates the accumulation and toxicity of  $\alpha$ -synuclein in vivo. *Acta Neuropathol*. 2022 Nov;144(5):881-910. doi: 10.1007/s00401-022-02491-8. Epub 2022 Sep 19.
27. Paldor I, Madrer N, Vaknine Treidel S, Shulman D, Greenberg DS, **Soreq H**. Cerebrospinal fluid and blood profiles of transfer RNA fragments show age, sex, and Parkinson's disease-related changes. *Journal of Neurochemistry*. 2022 Nov 10.
28. Engel T, Brennan GP, **Soreq H**. The molecular mechanisms of epilepsy and potential therapeutics. *Frontiers in Molecular Neuroscience*. 2022 Nov 22;15:1064121.
29. Shulman D, Dubnov S, Zorbaz T, Madrer N, Paldor I, Bennett DA, Seshadri S, Mufson EJ, Greenberg DS, **Loewenstein Y**, **Soreq H**. Sex-specific declines in cholinergic-targeting tRNA fragments in the nucleus accumbens in Alzheimer's disease. *bioRxiv [Preprint]*. 2023 Feb 20:2023.02.08.527612. doi: 10.1101/2023.02.08.527612. PMID: 36798311; PMCID: PMC9934682.
30. Winek K, Tzur Y, **Soreq H**. Biological underpinnings of sex differences in neurological disorders. *Sex and Gender Differences in Neurological Disease*. 2022 Jul 30:27.
31. Yayan N, Amsalem O, Zorbaz T, Yakov O, Dubnov S, Winek K, Dudai A, Adam G, Schmidtner AK, Tessier-Lavigne M, Renier N, Habib N, Segev I, London M, **Soreq H**. High-throughput morphometric and transcriptomic profiling uncovers composition of naïve and sensory-deprived cortical cholinergic VIP/CHAT neurons. *EMBO J*. 2023 Jan 4;42(1):e110565. doi: 10.15252/embj.2021110565. Epub 2022 Nov 15. PMID: 36377476; PMCID: PMC9811618.

#### Idan Segev

32. Hunt S, Leibner Y, Mertens EJ, Barros-Zulaica N, Kanari L, Heistek TS, Karnani MM, Aardse R, Wilbers R, Heyer DB, Goriounova NA, Verhoog MB, Testa-Silva G, Obermayer J, Versluis T, Benavides-Piccione R, de Witt-Hamer P, Idema S, Noske DP, Baayen JC, Lein ES, DeFelipe J, Markram H, Mansvelder HD, Schürmann F, **Segev I**, de Kock CPJ. Strong and reliable synaptic communication between pyramidal neurons in adult human cerebral cortex. *Cereb Cortex*. 2022 Jul 8:bhac246. doi: 10.1093/cercor/bhac246. Epub ahead of print. PMID: 35802476.

#### Inbal Goshen

33. Doron A, Rubin A, Benmelech-Chovav A, Benaim N, Carmi T, Refaeli R, Novick N, Kreisel T, Ziv Y, **Goshen I**. Hippocampal astrocytes encode reward location. *Nature*. 2022 Sep 22;609(7928):772-8.

## Israel Nelken

34. Amir N, Tishby N, Nelken I. A simple model of the attentional blink and its modulation by mental training. *PLoS Computational Biology*. 2022 Aug 29;18(8):e1010398.

## Jonathan Kadmon

35. Timcheck J, **Kadmon J**, Boahen K, Ganguli S. Optimal noise level for coding with tightly balanced networks of spiking neurons in the presence of transmission delays. *PLoS Computational Biology*. 2022 Oct 17;18(10):e1010593.

## Leo Joskowicz

36. Avisdris N, Link Sourani D, Ben-Sira L, **Joskowicz L**, Malingier G, Yagel S, Miller E, Ben Bashat D. Improved differentiation between hypo/hypertelorism and normal fetuses based on MRI using automatic ocular biometric measurements, ocular ratios, and machine learning multi-parametric classification. *European Radiology*. 2022 Jul 12:1-0.
37. Mousai O, Tafoureau L, Yovell T, Flaatten H, Guidet B, Jung C, de Lange D, Leaver S, Szczeklik W, Fjølner J, van Heerden PV, **Joskowicz L**, Beil M, Hyams G, Sviri S. Clustering analysis of geriatric and acute characteristics in a cohort of very old patients on admission to ICU. *Intensive Care Med*. 2022 Dec;48(12):1726-1735. doi: 10.1007/s00134-022-06868-x. Epub 2022 Sep 2. PMID: 36056194; PMCID: PMC9439274.
38. Fadida BS, Sourani DL, Sira LB, Miller E, Bashat DB, **Joskowicz L**. Partial annotations for the segmentation of large structures with low annotation cost. In *Medical Image Learning with Limited and Noisy Data: First International Workshop, MILLanD 2022, Held in Conjunction with MICCAI 2022, Singapore, September 22, 2022, Proceedings 2022 Sep 15* (pp. 13-22). Cham: Springer Nature Switzerland.
39. Avisdris N, Rabinowich A, Fridkin D, Zilberman A, Lazar S, Herzlich J, Hananis Z, Link-Sourani D, Ben-Sira L, Hirsch L, Ben Bashat D, **Joskowicz L**. Automatic fetal fat quantification from MRI. In *Perinatal, Preterm and Paediatric Image Analysis: 7th International Workshop, PIPPI 2022, Held in Conjunction with MICCAI 2022, Singapore, September 18, 2022, Proceedings 2022 Sep 22* (pp. 25-37). Cham: Springer Nature Switzerland.
40. Beil M, Flaatten H, Guidet B, **Joskowicz L**, Jung C, de Lange D, Leaver S, Fjølner J, Szczeklik W, Sviri S, van Heerden PV. Time-dependent uncertainty of critical care transitions in very old patients-lessons for time-limited trials. *Journal of Critical Care*. 2022 Oct 1;71:154067.
41. Davidson A, Feldman G, Mosheiff R, Suna A, **Joskowicz L**, Weil YA. Computer-Generated Radiographic Measurements of Distal Radius Fractures: Does It Help With Decision Making?. *The Journal of Hand Surgery*. 2022 Nov 3.
42. Fan X, Zhu Q, Tu P, **Joskowicz L**, Chen X. A review of advances in image-guided orthopedic surgery. *Physics in Medicine & Biology*. 2022 Dec 12.
43. Avisdris N, **Joskowicz L**, Dromey B, David AL, Peebles DM, Stoyanov D, Ben Bashat D, Bano S. BiometryNet: Landmark-based Fetal Biometry Estimation from Standard Ultrasound Planes. In *Medical Image Computing and Computer Assisted Intervention—MICCAI 2022: 25th International Conference, Singapore, September 18–22, 2022, Proceedings, Part IV 2022 Sep 16* (pp. 279-289). Cham: Springer Nature Switzerland.

## Leon Deouell

44. Eckert D, Reichert C, Bien CG, Heinze HJ, Knight RT, **Deouell LY**, Dürschmid S. Distinct interacting cortical networks for stimulus-response and repetition-suppression. *Communications biology*. 2022 Sep 5;5(1):909.
45. Mudrik L, **Deouell LY**. Neuroscientific evidence for processing without awareness. *Annual Review of Neuroscience*. 2022 Jul 8;45:403-23.

## Lilach Avitan

46. **Avitan L**, Stringer C. Not so spontaneous: Multi-dimensional representations of behaviors and context in sensory areas. *Neuron*. 2022 Jul 20.

## Merav Ahissar

47. Kimel E, Lieder I, **Ahissar M**. Repeated series learning revisited with a novel prediction on the reduced effect of item frequency in dyslexia. *Scientific Reports*. 2022 Aug 8;12(1):13521.

## Naomi Habib

48. Green GS, Fujita M, Yang HS, McCabe C, Taga M, Cain A, Zeng L, Regev A, Bennett DA, Menon V, **Habib N**. Cellular network perturbations point to a new microglia-astrocyte community accelerating Alzheimer's disease progression. *Alzheimer's & Dementia*. 2022 Dec;18:e067511.
49. Mishra A, Malik R, Hachiya T, Jürgenson T, Namba S, Posner DC, Kamanu FK, Koido M, Le Grand Q, Shi M, He Y, Georgakis MK, Caro I, Krebs K, Liaw YC, Vaura FC, Lin K, Winsvold BS, Srinivasasainagendra V, Parodi L, Bae HJ, Chauhan G, Chong MR, Tomppo L, Akinyemi R, Roshchupkin GV, **Habib N**, Jee YH, Thomassen JQ, Abedi V, Cárcel-Márquez J, Nygaard M, Leonard HL, Yang C, Yonova-Doing E, Knol MJ, Lewis AJ, Judy RL, Ago T, Amouyel P, Armstrong ND, Bakker MK, Bartz TM, Bennett DA, Bis JC, Bordes C, Børte S, Cain A, Ridker PM, Cho K, Chen Z, Cruchaga C, Cole JW, de Jager PL, de Cid R, Endres M, Ferreira LE, Geerlings MI, Gasca NC, Gudnason V, Hata J, He J, Heath AK, Ho YL, Havulinna AS, Hopewell JC, Hyacinth HI, Inouye M, Jacob MA, Jeon CE, Jern C, Kamouchi M, Keene KL, Kitazono T, Kittner SJ, Konuma T, Kumar A, Lacaze P, Launer LJ, Lee KJ, Lepik K, Li J, Li L, Manichaikul A, Markus HS, Marston NA, Meitinger T, Mitchell BD, Montellano FA, Morisaki T, Mosley TH, Nalls MA, Nordestgaard BG, O'Donnell MJ, Okada Y, Onland-Moret NC, Ovbiagele B, Peters A, Psaty BM, Rich SS, Rosand J, Sabatine MS, Sacco RL, Saleheen D, Sandset EC, Salomaa V, Sargurupremraj M, Sasaki M, Satizabal CL, Schmidt CO, Shimizu A, Smith NL, Sloane KL, Sutoh Y, Sun YV, Tanno K, Tiedt S, Tatlisumak T, Torres-Aguila NP, Tiwari HK, Trégouët DA, Trompet S, Tuladhar AM, Tybjærg-Hansen A, van Vugt M, Vibo R, Verma SS, Wiggins KL, Wennberg P, Woo D, Wilson PWF, Xu H, Yang Q, Yoon K; COMPASS Consortium; INVENT Consortium; Dutch Parelsoer Initiative (PSI) Cerebrovascular Disease Study Group; Estonian Biobank; PRECISE4Q Consortium; FinnGen Consortium; NINDS Stroke Genetics Network (SiGN); MEGASTROKE Consortium; SIREN Consortium; China Kadoorie Biobank Collaborative Group; VA Million Veteran Program; International Stroke Genetics Consortium (ISGC); Biobank Japan; CHARGE Consortium; GIGASTROKE Consortium; Millwood IY, Gieger C, Ninomiya T, Grabe HJ, Jukema JW, Rissanen IL, Strbian D, Kim YJ, Chen PH, Mayerhofer E, Howson JMM, Irvin MR, Adams H, Wassertheil-Smoller S, Christensen K, Ikram MA, Rundek T, Worrall BB, Lathrop GM, Riaz M, Simonsick EM, Kõrv J, França PHC, Zand R, Prasad K, Frikke-Schmidt R, de Leeuw FE, Liman T, Haeusler KG, Ruigrok YM, Heuschmann PU, Longstreth WT, Jung KJ, Bastarache L, Paré G, Damrauer SM, Chasman DI, Rotter JI, Anderson CD, Zwart JA, Niiranen TJ, Fornage M, Liaw YP,

Seshadri S, Fernández-Cadenas I, Walters RG, Ruff CT, Owolabi MO, Huffman JE, Milani L, Kamatani Y, Dichgans M, Debette S. Publisher Correction: Stroke genetics informs drug discovery and risk prediction across ancestries. *Nature*. 2022 Dec;612(7938):E7. doi: 10.1038/s41586-022-05492-5. Erratum for: *Nature*. 2022 Nov;611(7934):115-123. PMID: 36376532; PMCID: PMC9712088.

#### Shaul Hochstein

50. **Hochstein S**, Khayat N, Rukab SA. Ensemble perception, categorization, and high-level visual search. *Journal of Vision*. 2022 Dec 5;22(14):3408-.
51. Rukab SA, Khayat N, **Hochstein S**. High-level visual search in children with autism. *Journal of Vision*. 2022 Aug 1;22(9):6-.

#### Yair Weiss

52. Elnekave A, **Weiss Y**. Generating natural images with direct Patch Distributions Matching. In *Computer Vision—ECCV 2022: 17th European Conference, Tel Aviv, Israel, October 23–27, 2022, Proceedings, Part XVII 2022 Oct 24* (pp. 544-560). Cham: Springer Nature Switzerland.