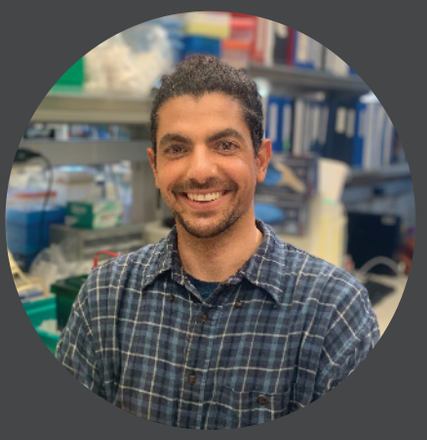

Roy Maimon, PhD

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EDUCATION

04/2020 - Present | Post Doctoral Fellow

Cellular and Molecular Medicine, University of California at San Diego, USA.
Topic: “Generation of new neurons for treating Agin and Neurodegeneration”.
Mentor: Prof. Don W Cleveland

10/2014 - 04/2020 | PhD in Neuro Cell Biology

Sackler School of medicine, Tel Aviv University, Israel.
Topic: “The Spatial Role of Semaphorins Signaling in ALS pathology”.
Mentor: Prof. Eran Perlson

10/2011 - 10/2014 | BSc in Neuro Science

Gonda Brain Research Center, Bar-Ilan University, Israel
Topic: “Spatial properties of tic-related neuronal activity in the cortico-basal ganglia loop”.
Mentor: Dr. Izhar Bar-Gad

PUBLICATIONS

Maimon R*, Chillon-Marinas C, Vaquez Sanchez S, Kern C, Jenie K, Moore S, Goongashvili A, Malykuma K, Moghadami S, Monell A, McAlonis-Downes M, Hong C, Jafar P, Bennett CF, Zhou Q, Ravitz J, Cleveland DW and Bintu B. (2024). ***Re-activation of neurogenic niches in aging brain***. BioRxiv, 2024.2001.2027.575940 (Under Re-revision in "Cell")

Nguyen, T.B., Miramontes, R., Chillon-Marinas, C., **Maimon, R***., Vazquez-Sanchez, S., Lau, A.L., McClure, N.R., England, W.E., Singha, M., Stocksdale, J.T., et al. (2023). ***Aberrant splicing in Huntington's disease via disrupted TDP-43 activity accompanied by altered m6A RNA modification***. BioRxiv. 10.1101/2023 and Nature Neuroscience

Baughn M, Melamed Z, Lopez-Erauskin J, Becarri M, Ling K, Zuberi A, Presa M, Gonzalo G, **Maimon R***, Vazquez-Sanchez S, Chaturvedi S, Bravo-Hernandez M, Taupin V, Moore S, Artates J, Acks E, Jafar- nejad P, Rigo F, C. Bennett F, Lutz C, Lagier-Tourenne C and Cleveland DW. (2023) ***Therapeutic restoration of stathmin-2 in TDP-43 proteinopathies***. Science, (6637):1140-1149

Maimon R*, Chillon-Marinas C, Snethlage C, Singhal S, McAlonis-Downes M, Ling K, Rigo F. Bennett F, Da Cruz S, Hnasko T, Muotri A & Cleveland DW (2021) ***Therapeutically viable generation of neurons with antisense oligonucleotide suppression of PTB***. Nature Neuroscience 1814

Maimon R*, Ankol L, Pery T.G, Ionescu A, Altman T, Weissova R, Tank E, , Opatowsky Y, Barmada S, Balastik M, and Perlson E (2021) ***A CRMP4-Dependent Retrograde Axon-to-Soma Death Signal in Amyotrophic Lateral Sclerosis***. The EMBO Journal

Qian H, Kang X, Hu J, Zhang D, Liang Z, Meng F, Zhang X, Xue Y, **Maimon R***, Dowdy S, Devaraj N, Zhou Z, Mobley W, Cleveland D & Fu X (2020) ***Reversing a model of Parkinson's disease with in situ converted nigral neurons.*** Nature 582,550–556

Altman T*, **Maimon R***, Ionescu A, Gradus T and Perlson E (2020) ***Axonal Transport of Organelles in Motor Neuron Cultures using Microfluidic Chambers System***. Jove

Ziak J, Weissova R, Jerabkova K, Janikova M, **Maimon R***, Petrasek T, Pukajova B, Wang M, Brill M.S, Kleisnerova M, Kasparek P, Zhou X, Alvarez-Bolado G, Sedlacek R, Misgeld T, Stuchlik A, Perlson E, Balastik M (2020) ***CRMP2 mediates Sema3F dependent axon pruning and dendritic spine remodeling.*** EMBO Rep. e48512.

Ionescu A, Gradus T, Altman T, **Maimon R***, Saraf Avraham N, Geva M, Hayden M & Perlson E (2019) ***Targeting the Sigma-1 Receptor via Pridopidine Ameliorates Central Features of ALS Pathology in a SOD1G93A Model.*** Cell Death Dis 10: 210

Barak R, Yom-Tov G, Guez-Haddad J, Gasri-Plotnitsky L, **Maimon R***, Cohen Berkman M, McCarthy AA, Perlson E, Henis-Korenblit S, Isupov MN & Opatowsky Y (2019) ***Structural Principles in Robo Activation and Auto-inhibition***. Cell 177: 272-285.e16

Maimon R*, Perlson E (2019) "***Muscle Secretion of Toxic Factors, Regulated by miR126-5p, Facilitates Motor Neuron Degeneration in ALS***". Neural Regen Res. 14(6):969-970

Maimon R*, Ionescu A, Bonnie A, Sweetat S, Wald-Altman S, Inbar S, Gradus T, Trotti D, Weil M, Behar O, Perlson E (2018) ***miR126-5p Downregulation Facilitates Axon Degeneration and NMJ Disruption via a Non-Cell-Autonomous Mechanism in ALS***. J Neurosci 38:5478–5494

Zahavi EE*, **Maimon R*** & Perlson E (2017) ***Spatial-specific functions in retrograde neuronal signalling.*** Traffic 18: 415–424

GRANTS AND AWARDS

2025-2029 - K99/R00: Pathway to Independence award from NIA
2024-2026 - HD Human Biology Project Grant, Huntington's Disease Society of America (HDSA)
2025 - Travel and Merit Award for the ISSCR 2025 Annual Meeting, Hong Kong
2023-2024 - Winner of the Dan Lewis Foundation (DLF) prize
2024 - Child support "The molecular and cellular basis of regeneration" EMBO Workshop
2024 - Travel award "Spatial Biology Summit" meeting, Stanford University
2023 - Travel award, Gordon Research Conference, "CAG triplet repeat disorders"
2023 - Travel, child support and Speaker, EMBO conference, "Mechanisms of neuronal remodeling"
2023 - Travel award, Keystone conference "Advances in the application of stem cells and their role"
2022 - Best poster presentation, "The 5th La Jolla Aging meeting"
2020-2022 - Hereditary Disease Foundation (HDF), postdoc fellowship
2017-2019 - Bochman Fellowship for Excellent Phd's Students
2019 - David and Paulina Trotsky Foundation Award for Excellent Ph.D. Stuents
2019 - Ramon Spacelab award, Guided 9th grade class for the first place in 2019th competition
2018 - Best papers of 2018 in Sackler faculty of medicine – Best student talk
2016 - Membrane and cytoskeleton remodeling meeting – Best student talk
2016 - Travel award for young scientists from Switzerland Institute of developmental Biology

RESEARCH PROJECTS

2020 - Present - "Generation of New Neurons for Treating Aging and Neurodegeneration"

Currently, as postdoc fellow, I test a new concept for treating neurodegeneration: ASO-dependent generation of new neurons. Ultimately this approach may open new era for treating neurodegenerative diseases.

2014 - 2020 - "The Spatial Role of Semaphorins Signaling in ALS pathology"

My predoctoral research focused on motor neuron-muscle cross talk, which I have used to identify new mechanisms by which muscles and neurons interact in health and disease. I have demonstrated that ALS-diseased muscles secrete toxic factors which facilitate motor neuron degeneration in early stages of ALS disease. I further found a micro RNA (miR126-5p) to have the ability to partially rescue this event. I further dealt with the motor neuron cell death observed in ALS disease. I suggested that muscle toxicity facilitates not only axon degeneration but also retrograde death signal which lead to cell death.

2011-2014 - "Spatial properties of tic-related neuronal activity in the cortico-basal ganglia loop"

During my BSc, I was part of a project in which mechanisms involved in Tourette syndrome were the primary focus. During my time in Bar-Gad's lab, I made stimulation electrodes and worked with rat models. The work was particularly important to me because it was my first lab experience and added to my initial encouragement me to seek an academic career

RESEARCH SKILLS

Light Microscopy: Live cell imaging, Spinning disk confocal, STED microscopy, TIRF microscopy, Light sheet microscopy.
MERFISH and single nuclear sequencing: Building custom MERFISH, Hybredization, Preparation and Analysis.
Cell Culture: Cell lines, Primary murine neurons, muscles and astrocytes, iPSC, Organoids and Microfluidic Co-Cultures.
Mice: Colonies managment, Intramuscular and Intrathecal Injections, Tissue collection, Behvioural tests.
Biochemistry: Western blot, immunocitochemistry, immunohistochemistry, protein pull downs, ELISA, protein purification.
Molecular Cell Biology: PCR, Primers design, Sequencing, Deep Sequencing, Nano String, Cloning (enzymatic digestions, bacterial cultures and cell transfection lentiviral particle packing, lentiviral tranfection and calcium tranfection), Crispr-Cas
Data analysis : Python**,** Fiji, Imaris, GraphPad-Prism, Office, SPSS and MATLAB.

Selected Oral Presentations

2025 - Speaker, ISSCR 2025, "International Symosya", Hong Kong
2025 - Speaker, ISSCR 2025, "Neural Stem Cell Conference", Athens
2024 - Speaker, "Spatial Biology Summit", Stanford University
2024 - Speaker, "3rd Neurogenesis Confrence", Cancun
2024 - Speaker, "Brain Cell Types, Circuits and Disorders Conference", Irvine
2023 - Speaker, EMBO conference, "Mechanisms of neuronal remodeling"
2023- Speaker, Cold Spring Harbor Conference, "Cell Identity conversion"

Patents

US Provisional Patent Application No. 62/671,460 & No. 62/671,463 ; Title: Spatial manipulation of miR126-5p to treat ALS & miR 126-5p For Treating Motor Neuron Diseases. Inventor