Burak Ogan Mancarci

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Education

2013-2018 (expected) **PhD, Bioinformatics**; University of British Columbia (Vancouver, Canada)

Thesis title: Identification/validation of cell type marker genes of the brain and their use in estimating cell type proportions in brain samples.

2009-2013 **BSc, Molecular Biology And Genetics;** Bilkent University (Ankara, Turkey)

Research Experience

2014 - present **PhD Student at UBC Micheal Smith Laboratories** - Supervisor: Dr. Paul Pavlidis

- Identification/validation of cell type marker genes of the brain and their use in estimating cell type proportions in brain samples (**github.com/oganm/brain-CellTypeSpecificGenes**).
- Development of a web application to visualize gene expression in brain cell types (**neuroexpresso.org**).

2013 **Rotation at BC Children's Hospital** - Supervisor: Dr. Wyeth Wasserman

- Analysis of CAGE data for detection of microRNA transcription start sites.

2013 **Rotation at Simon Fraser University** - Supervisor: Dr. Fiona Brinkman

- Analysis of antisense transcription in genomic islands.

2012 **Summer internship at University of Zurich** - Supervisor: Dr. Barbara Tschirren

- Selective mating of Japanese quails and computational analysis of various properties of quail and tit eggs.

2011 **Summer internship at Harvard Medical School** - Supervisor: Dr. George Daley

- Reprogramming of murine and human cells via viral vectors.

Teaching Experience

2016 **Teaching Assitant for Exploratory Data Analysis course (STAT 545) at UBC** - Instructor: Dr. Jenny Brian

2015 **Teaching Assitant for Exploratory Data Analysis course (STAT 545) at UBC** - Instructor: Dr. Jenny Brian

2015 **Instructional Skills Workshop at UBC** - **iswnetwork.ca**

Awards and Scholarships

2016 1st place in HackSeq hackaton - **hackseq.com**

2015 3rd place in SportsHack hackaton - **sportshackweekend.org/ca/2015**

2013-2014 Canadian Institutes of Health Research Training Program Scholarship

2009-2013 Bilkent 50% Scholarship

Presentations

Society for Neuroscience Annual Meeting 2017: Mancarci, B.O., Toker, L., Li, B., Rocco, B., Tripathy, S., Sibille, E., and Pavlidis, P. NeuroExpresso: A brain cell type specific gene expression database composed of pooled microarray and single cell RNA sequencing data.

25th Annual International Conference on Intelligent Systems for Molecular Biology: Mancarci, B.O., Toker, L., Li, B., Rocco, B., Tripathy, S., Sibille, E., and Pavlidis, P. (2017). NeuroExpresso: Cross laboratory database of brain cell type specific gene expression.

Society for Neuroscience Annual Meeting 2016: Toker, L., **Mancarci, B.O.**, Tripathy, S., and Pavlidis, P. (2016). Deciphering the cell-type specific component in the pathophysiology of brain-related disorders.

Society for Neuroscience Annual Meeting 2016: Tripathy, S., Tebaykin, D., **Mancarci, O.**, Toker, L., and Pavlidis, P. (2016). Transcriptomic correlates of brain-wide electrophysiological diversity.

Society for Neuroscience Annual Meeting 2016: Mancarci, O., Toker, L., and Pavlidis, P. (2016). Comparison of single cell and pooled cell expression data from mouse and human brain.

24th Annual International Conference on Intelligent Systems for Molecular Biology: Mancarci, O., Toker, L., Li, B., Tripathy, S., and Pavlidis, P. (2016). Identification of novel markers for mammalian brain cell types.

Organization of Computational Neurosciences Conference 2015: Tripathy, S.J., Tebaykin, D., Li, B., **Mancarci, O.**, Toker, L., and Pavlidis, P. (2015). Large-scale analysis of brain-wide electrophysiological diversity reveals novel characterization of mammalian neuron types. BMC Neurosci 16, O4.

23rd Annual International Conference on Intelligent Systems for Molecular Biology: Mancarcı, O., Toker, L., Tripathy, S., Pavlidis, P., Mancarcı, O., Toker, L., Tripathy, S., and Pavlidis, P. (2015). A comprehensive database of cell-type specific marker genes for the mammalian brain. F1000Research 4.

23rd Annual International Conference on Intelligent Systems for Molecular Biology: Toker, L., **Mancarci, O.**, Tripathy, S., and Pavlidis, P. (2015). A transcriptomics approach for revealing cell-type proportion changes in psychiatric disorders.

Publications

Mancarci, B.O., Toker, L., Tripathy, S.J., Li, B., Rocco, B., Sibille, E., and Pavlidis, P. (2017). Cross-Laboratory Analysis of Brain Cell Type Transcriptomes with Applications to Interpretation of Bulk Tissue Data. ENeuro 4.

Tripathy, S.J., Toker, L., Li, B., Crichlow, C.-L., Tebaykin, D., **Mancarci, B.O.**, and Pavlidis, P. (2017). Transcriptomic correlates of neuron electrophysiological diversity. PLOS Computational Biology 13, e1005814.

Horvath, G.A., Demos, M., Shyr, C., Matthews, A., Zhang, L., Race, S., Stockler-Ipsiroglu, S., Van Allen, M.I., **Mancarci, O.**, Toker, L., et al. (2016). Secondary neurotransmitter deficiencies in epilepsy caused by voltage-gated sodium channelopathies: A potential treatment target? Mol. Genet. Metab. 117, 42–48.

Onder, T.T., Kara, N., Cherry, A., Sinha, A.U., Zhu, N., Bernt, K.M., Cahan, P., **Mancarci, B.O.**, Unternaehrer, J., Gupta, P.B., et al. (2012). Chromatin-modifying enzymes as modulators of reprogramming. Nature 483, 598–602.

Software

NeuroExpresso: A web application for visualization of gene expression data in brain cell types. Available at **neuroexpresso.org**.

VASCO: A web application for visualization of gene expression data from single cell RNA sequencing experiments. Developed for HackSeq hackaton. Available at **hackseq.github.io/vasco**.

Impact Replays: A web application for visualization play-by-play data from football games. Developed for SportsHack hackaton. Available at **daattali.com/shiny/cfl**