

## Mariya Mardamshina, M.D., Ph.D.

Postdoctoral Fellow

Prof. Emma Lundberg's group

Dept. of Bioengineering

School of Engineering Shriram Center

Stanford University

443 Via Ortega

Stanford, CA, USA 94305



[mmariya@stanford.edu](mailto:mmariya@stanford.edu)

[mari.mardamshin@gmail.com](mailto:mari.mardamshin@gmail.com)



+1(650)6139198



[@Mia\\_Mardamshin](https://twitter.com/Mia_Mardamshin)



[linkedin.com/in/mariya-mardamshina-md-phd/](https://linkedin.com/in/mariya-mardamshina-md-phd/)

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### Education

10/2024 – till present Postdoctoral Fellow, Stanford University, Stanford, CA, USA

11/2023 – 09/2024 Researcher, KTH Royal Institute of Technology (SciLifeLab), Solna, Sweden

11/2021 – 10/2023 Postdoctoral fellow, KTH Royal Institute of Technology (SciLifeLab), Solna, Sweden

07/2021 – 10/2021 Postdoctoral fellow, Weizmann Institute of Science, Rehovot, Israel

10/2014 – 06/2021 PhD, Tel Aviv University, Israel (*degree conferral date: 2024/04/01*)

09/2006 – 07/2013 MD & Advanced training, Semey Medical University, Kazakhstan

### Positions

08/2013 – 01/2014 Medical resident in oncology, Semey Medical University, Kazakhstan

### Professional Experience and Skills

#### Mass spectrometry:

- Sample preparation techniques for shotgun MS analysis (SP3 digestion, TMT chemical labeling, “in-solution”, fractionation, single-cell workflows, etc.)
- Extensive hands-on experience with the instruments (maintenance, troubleshooting of LC-MS instruments)

**Microscopy and cellular imaging:**

- Multispectral multiplex immunofluorescence and fluorescent-protein tagging
- Laser-capture microdissection
- Confocal microscopy
- High throughput microscopy-based screening
- Advanced microscopy image analysis (machine learning-based algorithms)
- Fluorescence and phase contrast confocal microscopy
- Immunostaining
- Histopathological analysis
- Extensive hands-on experience with the instruments (maintenance, troubleshooting of instruments for multiplex spatial phenotyping and laser capture microdissection)

**Cell Biology:**

- Tissue culture methods
- Protein methods (isolation, identification, and characterization)

**Bioinformatics skills:**

- Programming languages: R, MATLAB, Python
- Knowledge of basic statistical methodologies
- Experience working with big data (data generation, normalization, unsupervised and supervised analyses)
- Experience working with image analysis, image segmentation, and spatial proteomic analysis
- Data analysis and visualization: Perseus, Cytoscape, Prism, SPSS, RStudio, TissUUmaps

**General skills:**

- Writing research and review papers
- Experienced in collaborations (ability to instruct, organize, and communicate)
- Guidance of laboratory students (Ph.D., M.Sc., and research engineers)
- Working with suppliers and facilities (Mass spectrometry, LCM, microscopy, etc.)
- Ability to develop and complete projects without continued direct supervision
- Use effective communication skills to present information accurately and clearly
- Time management and detail-oriented skills

**Other Experience and Memberships**

2013	Lower Saxony Summer Academy in Immunology, Hannover Biomedical Research School, Germany
2018 – 2021	Ambassador, European Association for Cancer Research, EU
2020 – till date	FeMS mentorship program and MSACL Early Career Network
2022 – till date	Cancer Grand Challenges Future Leaders Programme
2023 – till date	Cancer Grand Challenges Future Leaders Working Group

## Academic awards and achievements

2012	Awarded M.D. with honors
2018	Best poster award at CBRC conference
2018	Elifelet Volunteering Scholarship
2019	Constantiner Travel Scholarship

## Conferences

- Organizational committee, Cancer Grand Challenges Future Leaders Conference, Barcelona Spain, 2024
- Selected oral presentation at the EPIC-XS annual meeting, Crete Greece, 2023
- Selected oral presentation at the Cancer Grand Challenges Future Leaders Conference, Barcelona Spain, 2022
- Selected oral presentation and poster presentation at the Keystone Symposium on Proteomics and its Application to Translational and Precision Medicine, Stockholm Sweden, 2019
- Selected oral presentation at the Israeli Immunological Society (IIS) & the Israeli Society for Cancer Research (ISCR) conference, Tel Aviv Israel, 2019
- Selected oral presentation at the First Student Symposium of the Israeli Society of Mass Spectrometry, Israel, 2019
- Selected poster presentation at the 25th Biennial Congress of the European Association for Cancer Research (EACR25), Amsterdam Netherlands, 2018
- Selected poster presentation at the 18th CBRC Meeting, Ma'alot Israel, 2018
- Selected poster presentation at the Cell-VIB Symposium: Hallmarks of Cancer, Ghent Belgium, 2016
- Poster presentation at the 3rd Lower Saxony Summer Academy in Immunology at Hannover Biomedical Research School, Hannover Germany, 2013
- Poster presentation at the 9th International Warsaw medical congress of young scientists, Warsaw, Poland 2013
- Oral presentation at the International annual student scientific conference, Semey, Kazakhstan, 2008 and 2012
- Oral presentation at the International scientific conference of young scientists, Semey city, Kazakhstan, 2006

## Publications

**Mariya Mardamshina**, Anjana Shenoy, Daniela Necula, Kateryna Krol, Daniel Pirak, Nitay Itzhacky, Irina Marin, Bruria Shalmon, Roded Sharan, Einav Gal-Yam, Iris Barshack, Tamar Geiger. Proteomic landscape of multi-layered breast cancer internal tumor heterogeneity. bioRxiv 2021.08.05.455361. doi: <https://doi.org/10.1101/2021.08.05.455361>

Gali Yanovich-Arad, Paula Ofek, Eilam Yeini, **Mariya Mardamshina**, Artem Danilevsky, Noam Shomron, Rachel Grossman, Ronit Satchi-Fainaro, Tamar Geiger. Proteogenomics of glioblastoma associates molecular patterns with survival. *Cell Reports*. 2021. doi:10.1016/j.celrep.2021.108787

Michal Harel, Rona Ortenberg, Siva Karthik Varanasi, Kailash Chandra Mangalhara, **Mariya Mardamshina**, Ettai Markovits, Erez N Baruch, Victoria Tripple, May Arama-Chayoth, Eyal Greenberg, Anjana Shenoy, Ruveyda Ayasun, Naama Knafo, Shihao Xu, Liat Anafi, Gali Yanovich-Arad, Georgina D Barnabas, Shira Ashkenazi, Michal J Besser, Jacob Schachter, Marcus Bosenberg, Gerald S Shadel, Iris Barshack, Susan M Kaech, Gal Markel, Tamar Geiger. Proteomics of Melanoma Response to Immunotherapy Reveals Mitochondrial Dependence. *Cell*. 2019; 179(1):236-250.e18. doi:10.1016/j.cell.2019.08.012.

**Mariya Mardamshina**, Tamar Geiger. Next-Generation Proteomics and Its Application to Clinical Breast Cancer Research, *The American Journal of Pathology*, Volume 187, Issue 10, 2017, Pages 2175-2184, ISSN 0002-9440.

Sanem Sariyar, Alexandros Sountoulidis, Jan Niklas Hansen, Sergio Marco Salas, **Mariya Mardamshina**, Anna Martinez Casals, Frederic Ballllosera Navarro, Zaneta Andrusivova, Xiaofei Li, Paulo Czarnewski, Joakim Lundberg, Sten Linnarsson, Mats Nilsson, Erik Sundström, Christos Samakovlis, Emma Lundberg, Burcu Ayoglu. High-parametric protein maps reveal the spatial organization in early-developing human lung. *bioRxiv* 2024.01.25.577163; doi: <https://doi.org/10.1101/2024.01.25.577163>

Parikh S, Parikh R, Michael K, Bikovski L, Barnabas G, **Mardamshina Mariya**, Hemi R, Manich P, Goldstein N, Malcov-Brog H, Ben-Dov T, Glaich O, Liber D, Bornstein Y, Goltseker K, Ben-Bezael R, Pavlovsky M, Golan T, Spitzer L, Matz H, Gonen P, Percik R, Leibou L, Perluk T, Ast G, Frand J, Brenner R, Ziv T, Khaled M, Ben-Eliyahu S, Barak S, Karnieli-Miller O, Levin E, Gepner Y, Weiss R, Pfluger P, Weller A, Levy C. Food-seeking behavior is triggered by skin ultraviolet exposure in males. *Nat Metab*. 2022 Jul;4(7):883-900. doi: 10.1038/s42255-022-00587-9. Epub 2022 Jul 11. PMID: 35817855; PMCID: PMC9314261.

Adi Jacob Berger, Elinor Gigi, Lana Kupersmidt, Zohar Meir, Nancy Gavert, Amir Prior, Shlomit Gilad, Uzi Harush, Izhak Haviv, Salomon M Stemmer, **Mariya Mardamshina**, Sivan Kaminski Strauss, Gilgi Friedlander, Jair Bar, Iris Kamer, Yitzhak Reizel, Tamar Geiger, Yitzhak Pilpel, Yishai Levin, Amos Tanay, Baruch Barzel, Hadas Reuveni, Ravid Straussman. IRS1 phosphorylation determines a heritable probability of cancer cells to persist during EGFR inhibition therapy. *Nature Cancer*, 2021 Oct;2(10):1055-1070. doi: 10.1038/s43018-021-00261-1. Epub 2021 Oct 21. PMID: 35121883.

Parikh Roma, Sorek Eschar, Michael Keren, Parikh Shivang, Bikovski Lior, Golan Tamar, **Mardamshina Mariya**, Boonman Arjan, Kronfeld-Schor Noga, Joseph Hadas Bar, Matz Hagit, Pavlovsky Mor, Liel Yair, Brenner Ronen, Gepner Yftach, Karnieli-Miller Orit, Hemi Rina, Luxenburg Chen, Shalgi Ruth, Percik Ruth, Weller Aron, Levy Carmit. Skin Mediates the Aphrodisiac Effect of UVB Light Via a Skin-Brain-Gonad Axis. *Cell Reports*, 2021 Aug 24;36(8):109579. doi: 10.1016/j.celrep.2021.109579. PMID: 34433056.

Lisa Mor-Yossef Moldovan, Maayan Lustig, Alex Naftaly, **Mariya Mardamshina**, Tamar Geiger, Amit Gefen, Dafna Benayahu. Cell Shape Alteration During Adipogenesis Is Associated with Coordinated Matrix Cues, In The Journal of Cellular Physiology, Issue Online, 2019, 234(4), 3850–3863.

Yaron Hillman, **Mariya Mardamshina**, Metsada Pasmanik-Chor, Lea Ziporen, Tamar Geiger, Noam Shomron, Zvi Fishelson. MicroRNAs Affect Complement Regulator Expression and Mitochondrial Activity to Modulate Cell Resistance to Complement-Dependent Cytotoxicity. Cancer Immunol Res. 2019;7(12):1970-1983. doi:10.1158/2326-6066.CIR-18-0818.