MARINA TEREKHOVA

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https://scholar.google.com/citations?user=rGQC54QAAAAJ&hl

EDUCATION

MSc, Bioinformatics and Systems Biology | Sept 2019 – June 2021

St.Petersburg ITMO University, Russia

- GPA: 3.9/4.00; Diploma with honours

Medical Residency in Infectious Diseases | Sept 2018 – Aug 2019

St.Petersburg State University, Russia

- Botkin Infectious Disease Hospital
- Completed 60 credits

Medical Doctor (M.D.), General Medicine | Sept 2012 – July 2018

St.Petersburg State University, Russia

- GPA: 3.5/4.00

WORK EXPERIENCE

Washington University in St.Louis, Artyomov lab

- Senior Scientist | June 2024 – Present
- Staff Scientist | May 2023 – June 2024
- Visiting Researcher | Dec 2021 – May 2023

ImmunoMind Inc., Berkeley, CA; Remotely

- Junior bioinformatician | Jan 2021 – Dec 2021

Vsevolozhsk Clinical Interdistrict Hospital, Russia; Orthopedic Trauma Department

- Medical Nurse | July 2017 – Aug 2018

SKILLS

- Programming & Computational Tools: Proficient in R, Python, and Bash scripting. Building Docker and Conda environments, Snakemake workflows. Backend development of web-based data analysis platforms; development of interactive R Shiny applications for biological data exploration.
- Omics Data Processing: Bulk and single-cell RNA-seq, CITE-seq, TCR/BCR sequencing, ATAC-seq, CUT&RUN, proteomics (mass spectrometry). Visium HD spatial transcriptomic analysis. Large-scale data handling: processing and integrating datasets with over 10 million single cells. Genotype and hashtag-based demultiplexing.
- Downstream Data Analysis: Differential gene/protein expression analysis, gene set enrichment, and pseudotime inference. Cell type annotation, subpopulation discovery, and trajectory analysis. Regulon activity and transcription factor network inference. Cell-cell communication analysis. Integration of multi-modal datasets.
- De novo genome assembly (prokaryotic).
- Machine Learning & Data Modeling: Supervised and unsupervised learning: Random Forest, SVM, linear/logistic regression, k-means, hierarchical clustering. Dimensionality reduction techniques.
- Translational Immunology: Linking immunological mechanisms to clinical phenotypes across infection, aging, and chronic inflammation. In-depth knowledge of human immunology, including adaptive and innate immune responses, T cell biology, cytokine signaling, and immune aging.

ACHIEVEMENTS

- **Pathology & Immunology Shining Star Staff Award 2025**

  This award recognizes and rewards an outstanding P&I staff member who has provided exemplary service.

- **Top 10 most-cited papers published by the journal Molecular Oral Microbiology in 2025.**
- **Featured in Nature News for research on immune aging:** doi: 10.1038/d41586-024-01274-3
- **Recognized by Synapse in a press release for a widely accessed dataset (200+ unique users in 6 months)**
- **Scholarship for student work under the guidance of young researchers, 2020. St.Petersburg Pasteur Institute.**

  WGS-based characterization of Listeria spp.isolates from St.Petersburg and the Vologda region. Supervisor: L.Kraeva, PhD, Head of laboratory of Medical Bacteriology, Pasteur Institute.

ADDITIONAL EXPERIENCE

- **Guest Lecturer:** Single-cell data analysis, Master's Program, ITMO University, Russia
- **Invited Guest Editor** for the November 2025 Special Issue of the Journal of Leukocyte Biology
- **Reviewer**: The FEBS Journal, Communication Biology. Elsevier Hub (Current Opinion in Immunology, Immunology Letters, Journal of Microbiology, Immunology and Infection, Molecular Immunology), American Journal of Cancer Research

RESEARCH PUBLICATIONS

- **Terekhova, M.**, Kleverov, M., ... Artyomov, M. N. *Pan-atlas of immune aging in blood reveals ratio of GZMK+ to GZMB+ CD8+ effector memory T cells as determinants of human health trajectories. Immunity. In review.*
- Wielento, A., Drapała, D. M., **Terekhova, M.**, ... Grabiec, A. M., & Potempa, J. (2026). *Macrophage activation and invasion by P. gingivalis is modulated by PPAD and accessory fimbriae subunits*. Journal of oral microbiology, 18(1), 2638646. https://doi.org/10.1080/20002297.2026.2638646
- **Terekhova, M.**, Bohacova, P., & Artyomov, M. N. (2025). *Human immune aging*. Immunity, 58(11), 2646–2669. https://doi.org/10.1016/j.immuni.2025.10.009
- **Terekhova, M.**, Artyomov, M. (2025). *Rethinking inflammaging across human diversity*. Nat Aging. https://doi.org/10.1038/s43587-025-00933-y
- Cooper, K. N., **Terekhova, M.**, ... Bagaitkar, J. (2025). *The trapping of live neutrophils by macrophages during infection*. Cell death & disease, 16(1), 488. https://doi.org/10.1038/s41419-025-07808-5
- Li, W., Terada, Y.,... **Terekhova, M.**, ... Kreisel, D. (2025). *Maintenance of graft tissue-resident Foxp3+ cells is necessary for lung transplant tolerance in mice*. The Journal of clinical investigation, e178975. doi: 10.1172/JCI178975
- Cooper, K. N., Wielento, A., Morris, S. C., **Terekhova, M.**, ... Potempa, J., & Bagaitkar, J. (2025). *Limited proteolysis of neutrophil granule proteins by the bacterial protease RgpB depletes neutrophil antimicrobial capacity*. Journal of leukocyte biology, 117(2), qiae209. doi: 10.1093/jleuko/qiae209

- Cantoni, C., Smirnov, R. A., … **Terekhova, M.**, … Edelson, B. T., & Wu, G. F. (2025). A single-cell compendium of human cerebrospinal fluid identifies disease-associated immune cell populations. The Journal of clinical investigation, 135(1), e177793. doi: 10.1172/JCI177793
- Bohacova, P.*, **Terekhova, M.***, … Artyomov, M.N. (2024). Multidimensional profiling of human T cells reveals high CD38 expression, marking recent thymic emigrants and age-related naive T cell remodeling. Immunity, 57(10), 2362–2379.e10. doi: 10.1016/j.immuni.2024.08.019
- Tufan, T., Comertpay, G., Villani,A., Nelson, M.G., **Terekhova, M.** … Ravichandran, K.S. (2024). *Rapid unleashing of macrophage efferocytic capacity via transcriptional pause release*. Nature 628, 408–415 (2024). doi: 10.1038/s41586-024-07172-y
- **Terekhova, M.**, Swain, A., Bohacova,P., … Artyomov, M. N. (2023). *Single-cell atlas of healthy human blood unveils age-related loss of NKG2C+GZMB-CD8+ memory T cells and accumulation of type 2 memory T cells*. Immunity, 56(12), 2836–2854.e9. doi: 10.1016/j.immuni.2023.10.013
- Chan, M. M., Daemen, S., Beals, J. W., **Terekhova, M.**, … Schilling, J. D. (2023). *Steatosis drives monocyte-derived macrophage accumulation in human metabolic dysfunction-associated fatty liver disease*. JHEP reports: innovation in hepatology, 5(11), 100877. doi: 10.1016/j.jhepr.2023.100877
- Wielento, A., Bereta, G. P., Szczęśniak, K., Jacuła, A., **Terekhova, M.**, … Potempa, J. (2023). *Accessory fimbrial subunits and PPAD are necessary for TLR2 activation by Porphyromonas gingivalis*. Molecular oral microbiology, 38(4), 334–346. doi: 10.1111/omi.12427
- Selli, M. E., Landmann, J. H., **Terekhova, M.**, … Singh, N. (2023). *Costimulatory domains direct distinct fates of CAR-driven T-cell dysfunction*. Blood, 141(26), 3153–3165. doi: 10.1182/blood.2023020100
- Hou, J., Zhou, Y., Cai, Z., **Terekhova, M.**, … Colonna, M. (2023). *Transcriptomic atlas and interaction networks of brain cells inmouse CNS demyelinationand remyelination*. Cell reports, 42(4), 112293. doi: 10.1016/j.celrep.2023.112293
- Gallerand, A., Caillot, Z., **Terekhova, M.**, … Ivanov, S. (2024). *CD226+ adipose tissue macrophages arise from MDP-derived monocytes and regulate lipid metabolism*. bioRxiv, 2024.12.03.626330. doi: 10.1101/2024.12.03.626330
- Rodriguez-Hernandez, C. J., **Terekhova, M.**, … Bagaitkar, J. (2025). *Virion stripping: A new role for bacterial proteases*. bioRxiv, 2025.05.03.652018. doi: 10.1101/2025.05.03.652018

CONFERENCE PARTICIPATION

- **Poster Presentation:** Single-cell atlas of healthy human blood unveils age-related loss of NKG2C+GZMB-CD8+ memory T cells and accumulation of type 2 memory T cells. 53rd Annual Meeting of the American Aging Association; Anchorage, AK
- **Poster Presentation:** Single-cell atlas of healthy human blood unveils age-related loss of NKG2C+GZMB-CD8+ memory T cells and accumulation of type 2 memory T cells. American Association of Immunologist Annual Meeting 2025; Honolulu, HI
- **Oral Presentation:** Single-cell atlas of healthy human blood unveils age-related loss of NKG2C+GZMB-CD8+ memory T cells and accumulation of type 2 memory T cells. American Aging Association 52nd Annual Meeting; 2024 Madison, WI
- **Poster Presentation:** Single-cell atlas of healthy human blood unveils age-related loss of NKG2C+GZMB-CD8+ memory T cells and accumulation of type 2 memory T cells. Computational Genomics Summer Institute: CGSI, 2023; Los Angeles , CA
- **Poster Presentation:** Reverse age-dependence of NKG2C+ CD8 memory T cells and correlated accumulation of type 2 memory CD4/CD8 T cells in healthy aging revealed through single-cell atlas of human blood. Workshop: Advances in Aging, Immunity, and Chronic Inflammatory Disease, 2023; Bethesda, MD