

Shira Weingarten-Gabbay

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EDUCATION AND APPOINTMENTS

- 2025 - **Assistant Professor of Microbiology.** Harvard Medical School
- 2025 - **Associate Member.** The Broad Institute of MIT and Harvard
- 2022 - 2024 **Visiting Postdoctoral Fellow.** The Rockefeller University
Advisor: Prof. Charles Rice, Laboratory of Virology and Infectious Disease
- 2017 - 2024 **Postdoctoral Fellow.** The Broad Institute of MIT and Harvard
Advisor: Prof. Pardis Sabeti, Infectious Disease & Microbiome Program
- 2011 – 2017 **PhD in Life Sciences (Systems Biology).** Weizmann Institute of Science
Advisor: Prof. Eran Segal, Department of Computer Science & Applied Mathematics and Department of Molecular Cell Biology
Thesis: Unraveling the regulatory code of transcription and translation in the human genome and viruses
- 2008 – 2011 **MSc in Life Sciences (Molecular Genetics).** Weizmann Institute of Science
Advisor: Prof. Adi Kimchi, Department of Molecular Genetics
Thesis: The translation initiation factor DAP5 promotes IRES-driven translation of p53 mRNA
- 2005 - 2008 **BSc in Medical Sciences (*magna cum laude*).** Hadassah Medical School, Hebrew University

AWARDS AND HONORS

- Beckman Young Investigator. 2026
- Searle Scholar. 2026
- Smith Family Awards Program for Excellence in Biomedical Research. 2026
- Aramont Fellowship Fund for Emerging Science Research. 2026
- Edward J. Mallinckrodt Jr. Foundation Grant Awardee. 2025
- Broad Institute Next Generation Award. 2025
- Blavatnik Regional Awards Laureate in Life Sciences. 2024
- Eric S. Lander Prize in Scientific Excellence for Postdoctoral Researchers. 2024
- The RNA Society Eclipse award for innovation in high throughput Biology. 2023
- Leading Edge Fellow. 2022
- BroadIgnite award. The Broad Institute. 2021
- 40-under-40 list of Israel's most promising young people. Globes Magazine. 2020
- Human Frontier Science Program (HFSP) Long-Term fellowship. 2019
- Life Science Research Foundation (LSRF) fellowship. (declined)
- The Zuckerman STEM Leadership Program for Israeli Postdoctoral Fellowship. 2019
- EMBO Long-Term fellowship. 2018 (non-stipendiary fellow).
- Gruss-Lipper postdoctoral fellowship. 2018
- Rothschild postdoctoral fellowship. 2017.
- Israel national postdoctoral award for advancing women in science. 2017
- The Israeli council for higher education (VATAT) fellowship for excellent women postdocs. (declined)
- The Lady Anne Chain memorial prize for academic excellence. Finberg Graduate School. 2017

- Travel grant award - EMBO workshop on Antigen Processing and Presentation. 2017
- Travel scholarship for the McGill-Weizmann Cancer Symposium in Montreal. 2016
- Clore PhD fellowship. 2013
- Student project grant award of the Azrieli Center for Systems Biology. 2012, renewed in 2014
- Student research grant award of the Kahn Center for Systems Biology. 2011
- Rector of the university scholarship for outstanding students. Hebrew University of Jerusalem. 2008
- Dean of the faculty scholarship for outstanding students. Faculty of Medicine, Hebrew University. 2007
- Dean of the faculty excellence list. Faculty of Medicine, Hebrew University of Jerusalem. 2006, 2007, 2008
- Amos De Shalit Ulpana for outstanding students in life sciences. Weizmann Institute of Science. 2007

FIRST/CO-FIRST/CORRESPONDING AUTHOR PUBLICATIONS

NCBI My Bibliography: <https://www.ncbi.nlm.nih.gov/myncbi/1DyhuytwgNF5r/bibliography/public/>

* co-first author

^ corresponding authors

lead contact

1. **Weingarten-Gabbay S[^]**, Bauer MR, Stanton AC, Yu Y, Freije CA, Welsh NL, Boehm CK, Klaeger S, Verzani EK, López D, Hensley LE, Clauser KR, Carr SA, Abelin JG, Rice CM, Sabeti PC[^]. Pan-viral ORFs discovery using massively parallel ribosome profiling. **Science**. 2025 > [The New York Times](#), [BBC podcast](#), [Harvard Medical School news](#)
2. **Weingarten-Gabbay S^{*^}#**, Chen D-Y*, Sarkizova S*, Taylor HB, Gentili M, Pearlman LR, Bauer MR, Rice CM, Clauser KR, Hachoen N, Carr SA, Abelin JG, Saeed M, Sabeti PC. The HLA-II immunopeptidome of SARS-CoV-2. **Cell Reports**. 2024
3. **Weingarten-Gabbay S^{*^}#**, Pearlman LR*, Chen D-Y, Klaeger S, Taylor HB, Welch NL, Keskin DB, Carr SA, Abelin JG, Saeed M, Sabeti PC. HLA-I immunopeptidome profiling of human cells infected with high-containment enveloped viruses. **STAR protocols**. 2022
4. **Weingarten-Gabbay S^{*^}#**, Klaeger S[^], Sarkizova S*, Pearlman LR, Chen D-Y, ..., Hacohen N, Carr SA, Abelin JG, Saeed M[^], Sabeti PC. Profiling SARS-CoV-2 HLA-I peptidome reveals T cell epitopes from out-of-frame ORFs. **Cell**. 2021 > [Cell cover](#), [HFSP highlight](#), [Broad Institute news](#), [Boston University news](#)
5. **Weingarten-Gabbay S^{*^}**, Nir R*, Lubliner S, Sharon E, Kalma Y, Weinberger A and Segal E[^]. Systematic interrogation of human promoters. **Genome Research**. 2019
6. Gritsenko AA*, **Weingarten-Gabbay S^{*}**, Elias-Kirma S, Nir R, de Ridder D and Segal E. Sequence features of viral and human internal ribosome entry sites predictive of their activity. **PLoS Comp Biol**. 2017
7. **Weingarten-Gabbay S**, Elias-Kirma S, Nir R, Gritsenko AA, Yakhini Z, Stern-Ginossar N, Weinberger A and Segal E. Systematic discovery of cap-independent translation sequences in human and viral genomes. **Science**. 2016 > [Perspective in Science](#), [Highlight in Cell Systems](#), [Faculty of 1000 review](#), [Weizmann Institute news](#)
8. **Weingarten-Gabbay S** and Segal E. Toward a systematic understanding of translational regulatory elements in human and viruses. **RNA Biology**. 2016
9. **Weingarten-Gabbay S** and Segal E. The grammar of transcriptional regulation. **Human Genetics**. 2014
10. **Weingarten-Gabbay S** and Segal E. A shared architecture for promoters and enhancers. **Nature Genetics**. 2014 (News and Views on Core *et al.*)
11. **Weingarten-Gabbay S^{*}**, Khan D*, Liberman N, Yoffe Y, Bialik S, Das S, Oren M and Kimchi A. The translation initiation factor DAP5 promotes IRES-driven translation of *p53* mRNA. **Oncogene**. 2014

CONTRIBUTING AUTHOR PUBLICATIONS

12. Hernández G, García A, **Weingarten-Gabbay S**, Hussain T, Mishra RK, Amiri M, Lasko P, Moreno-Hagelsieb G, Ivanov IP, Dever T, Sonenberg N. Functional analysis of the AUG initiator codon context reveals a conserved motif that disfavors mRNA translation in eukaryotes. **NAR**. 2023

13. David M, Olender T, Mizrahi O, **Weingarten-Gabbay S**, Friedlander G, Savidor A, Levin Y, Salomon V, Stern-Ginossar N, Bialik S and Kimchi A. DAP5 drives translation of specific mRNA targets with upstream ORFs in human embryonic stem cells. **RNA**. 2022
14. Chen CK, Cheng R, Demeter J, Chen J, **Weingarten-Gabbay S**, Jiang L, Snyder MP, Weissman JS, Segal E, Jackson PK and Chang HY. Structured elements drive extensive circular RNA translation. **Mol Cell**. 2021
15. Taylor HB, Klaeger S, Clauser KR, Sarkizova S, **Weingarten-Gabbay S**, Graham DB, Carr SA, Abelin JG. Mass spectrometry-based HLA-II peptidomics combined with multi-omics will aid the development of future immunotherapies. **Mol Cell Proteomics**. 2021
16. Finkel Y*, Mizrahi O*, Nachshon A, **Weingarten-Gabbay S**, Yahalom-Ronen Y, Tamir H, Achdout H, Melamed S, Weiss S, Israely T, Paran N, Schwartz M and Stern-Ginossar N. The coding capacity of SARS-CoV-2. **Nature**. 2020
17. Vainberg Slutskin I, **Weingarten-Gabbay S**, Nir R, Weinberger A and Segal E. Unraveling the determinants of microRNA mediated regulation using a massively parallel reporter assay. **Nature Communications**. 2018
18. Keren L*, van Dijk D*, **Weingarten-Gabbay S**, Davidi D, Jona G, Weinberger A, Milo R and Segal E. Noise in gene expression is coupled to growth rate. **Genome Research**. 2015