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Mentor-Grad Student Spotlights, MGS, Series 2026



Dr. Sahar Melamed

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With 20 years of experience and more than 20 publications, Dr. Melamed leads a research [group](#) that studies how small molecules called small RNAs (sRNAs) help bacteria respond to their surroundings, including the human body, bacteriophages (viruses that infect bacteria), and other bacterial species. By understanding how these sRNAs work during infections and environmental changes, the lab aims to improve our ability to deal with different disease-causing microbes.

Under the tutelage of Prof. Shimshon Belkin, Dr. melamed got his PhD from the Department of Plant and Environmental Sciences, The Alexander Silberman Institute of Life Sciences, The Hebrew University of Jerusalem. His doctoral thesis focused on the development of microbial sensors for the detection of toxicants and antibiotic compounds, construction and immobilization at the nanoliter scale. After completing PhD, he took up a postdoctoral position in Prof. Hanah Margalit 's lab at the Department of Microbiology and Molecular Genetics, Faculty of Medicine, The Hebrew University of Jerusalem. Among the many interesting findings, Dr. Melamed takes pride in his [published](#) work in *Molecular Cell* that presented the development of RIL-seq, a broadly applicable method for transcriptome-wide identification of sRNA targets, addressing a longstanding challenge in RNA biology. The approach provides unprecedented resolution of sRNA-mediated interactions and has been widely applied across bacterial species to generate comprehensive RNA–RNA interaction networks. These findings demonstrate that post-transcriptional regulation by sRNAs is as prevalent as transcriptional regulation by transcription factors. This was followed by a second postdoc appointment in the laboratory of Dr. Gisela Storz at the division of Molecular and Cellular Biology, NICHD, National Institute of Health, USA. His work involved the characterization of the sRNAs mode of action, their effect on bacterial physiology, and deciphering the RNA-RNA interactomes of different RNA-binding proteins in various bacteria.

Melamed [lab](#)'s current work has shown that phage sRNAs, such as PreS, target essential host processes, including DNA replication, effectively hijack the bacterial replication system during the lytic cycle. In other projects, the Melamed lab expand RIL-seq to multiple bacterial species and combine it with mechanistic studies to map RNA–RNA interaction networks across diverse hosts, and reveal how sRNAs integrate into broader regulatory circuits.

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Dr. Melamed's advice for postdocs and grad students: "Do not be afraid to chase ideas that seem strange or risky, some of the best discoveries come from paths no one expects. Learn your system deeply, but stay flexible and open to new methods; they often reveal things you would not see otherwise. Collaborate with people who push you to think differently, and treat setbacks as part of the process rather than failures. Most importantly, hold on to your curiosity and excitement, those are what make the long hours and challenges worthwhile."



Aviezer Silverman is a PhD student in the Melamed [lab](#) at The Hebrew University of Jerusalem, Israel. His thesis is titled "*The role of small RNAs in the ongoing arms race between phages and their hosts*"

As a budding scientist with 4 years of research experience and 4 publications, his most recent research work was published in [Molecular Cell](#).

In line with the mission at [JoLS-Pub](#), to educate the public at large on research outcomes, a LAYMAN [summary](#) of these findings is published in our March 2026 [issue](#).

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