



Simposio Internacional / *International Symposium:*

## **Nuevas perspectivas en la investigación sobre el cáncer** *New insights in cancer discovery*

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### **YIFAT MERBL**

Department of Immunology



**Dr. Yifat Merbl** completed her BS summa cum laude in Computational Biology at Bar Ilan University in 2003. She earned an MSc in Immunology at the Weizmann Institute in 2005 with Prof. Irun Cohen. She joined the first PhD program in Systems Biology at Harvard Medical School, completing her PhD there in 2010. She stayed on at Harvard as a postdoctoral fellow until joining the Department of Immunology at the Weizmann Institute in 2014. She is the incumbent of the Leonard and Carol Berall Career Development Chair.

Dr. Merbl's research explores the many modifications that proteins undergo in the human body. The proteins are the functional units in our cells performing the different tasks that are needed for our cells and tissues to operate properly. Drawing on her background in computational biology, cell biology, biochemistry, and immunology, Dr. Merbl developed a high-throughput system that enabled her to monitor changes in post-translational modifications of thousands of proteins in parallel, under conditions that are relatively close to those of the complex cellular environment.

These changes in protein modification are instrumental to the activity of proteins; thus, revealing the regulatory code that controls how protein modifications alter proteins' function is key for understanding the dynamic regulation of cells in health and disease. In her new lab, Dr. Merbl wants to zero in on the ubiquitin system, a key post-translational modification that is involved in essentially every aspect of cell regulation ranging from cell division, to gene expression and developmental processes. Aberrations in the regulation of ubiquitin have been recently implicated in cancer.

Since establishing the lab, Yifat has further developed the protein modification profiling platform to provide a proof-of-concept for the ability to analyze clinical samples, such as tumor biopsies. This exciting direction offers a new way to study the protein modification landscape in cancer and in the future may provide a novel dimension to molecular and clinical diagnosis.

Her scholarships and awards include being nominated for the NIH Independent Award. She received a pre- doctoral fellowship in the Department of System Biology at Harvard Medical School, the Horowitz Center for Complexity Science Award in 2005, the Sarah Werch Research Scholarship in 2004, and the Sara Rottenberg Scholarship in Cancer Research at the Weizmann Institute in 2003. She received the 2000 President's Excellence Award at Bar- Ilan University. In 2014, she was also selected to join the Israeli Centers of Research Excellence (I-CORE) program.