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Byline: n/a

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The sbv IMPROVER Epigenomics Challenge, designed to identify and test novel techniques in computational biology, has culminated in a multi-disciplinary symposium in Tel Aviv, Israel which has attracted computational scientists, bioinformaticians and clinicians working across a variety of medical fields. Delegates met to discuss the outcomes of the challenge, which asked participants to classify samples from different systems toxicology studies according to specific criteria, as well as other current issues in epigenomics and its applications within biomedicine.

“The sbv IMPROVER project is addressing some of the most fundamental questions about the relationship between genetics, epigenetics and biomedicine,” said Professor Tamir Tuller, Head of the Laboratory of Computational Systems and Synthetic Biology, Tel Aviv University, Israel, and one of the symposium key note speakers. “As computational techniques become ever more sophisticated, the sbv IMPROVER challenges allow us to identify and assess the best tools for any given biological objective. Not only does this science give us a better understanding of the way our genome has evolved, it has direct applications for human health and biotechnology, including improved diagnostics, drug-discovery and the development of new therapies.”

The Epigenomics Challenge asked participants to classify samples based on the epigenomic impact of cigarette smoke, smoking cessation and the aerosol from a Reduced-Risk Product* in a rodent model. Participants were provided with large, complex datasets on which to make their classifications, which were then scored against the true, hidden classifications. The Epigenomics Challenge was open to scientists working in Israel, and although it is now closed, the data will continue to be mined for further epigenomic understanding and the assessment of computational techniques.

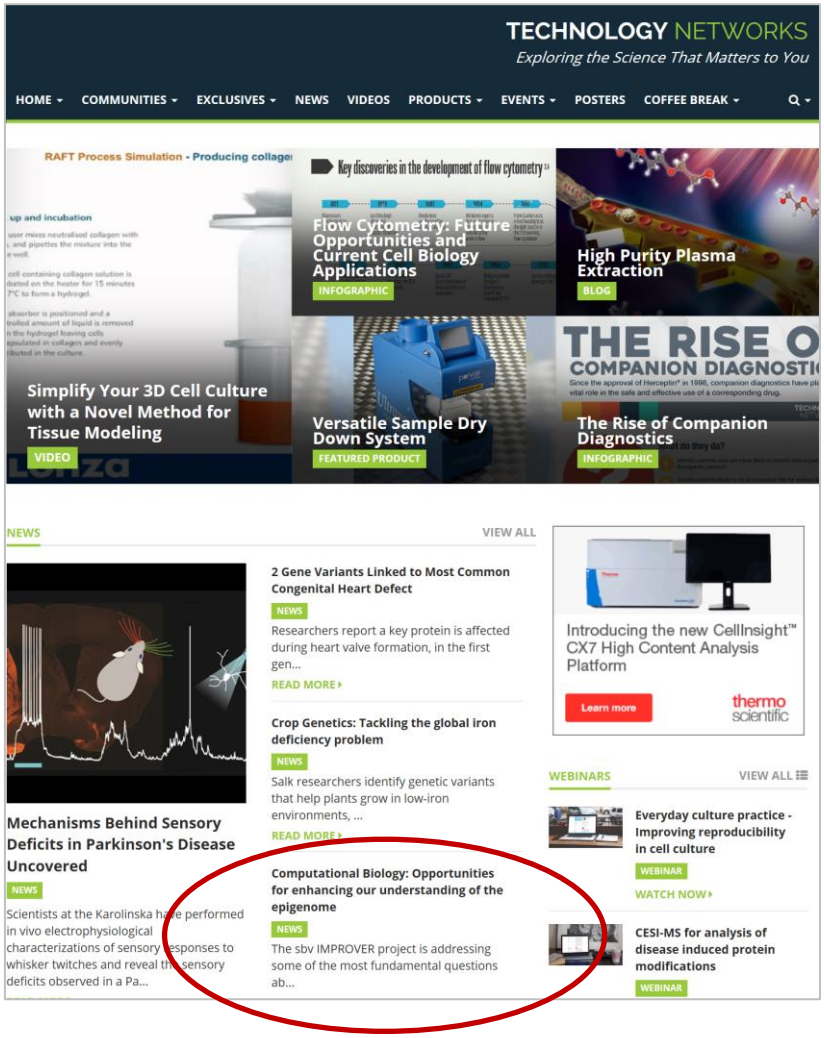
“Initiatives such as the sbv IMPROVER Epigenomics Challenge and symposium are uncovering invaluable new insights as we strive towards a comprehensive understanding of cellular complexity and the ways in which the genome is modified under different conditions,” said Professor Yael Mandel-Gutfreund, Technion-Israel Institute of Technology, Israel, also one of the symposium key note speakers. “sbv IMPROVER is helping to identify new and exciting computational methodologies that enhance scientific discovery across a number of

fields. I hope that this work continues, and that the significant potential of computational science continues to be explored."

The symposium in Tel Aviv comprised an award ceremony for the challenge best-performer, talks from key note speakers on relevant issues in epigenetics and genomics, and a discussion by PMI representatives of scientific results obtained in the preclinical and clinical assessment of a candidate Reduced-Risk Product. Commenting on the event, first prize winner Hagit Philip, Systems BioMedicine Lab, Faculty of Life Science, Bar-Ilan University, said: "It was fantastic to have my efforts in the Epigenomics Challenge recognized and to have access to such high-quality data. This has been a significant learning opportunity for me and I look forward to seeing what comes next for the sbv IMPROVER project."

sbv IMPROVER, a collaborative initiative led and funded by Philip Morris International, was launched in 2012 and comprises a series of open scientific challenges, each exploring a different unanswered question in systems biology. Based on the principles of crowd-sourcing and collaborative competition, sbv IMPROVER challenges are designed to facilitate transparency of research processes and to use the knowledge and intellectual power of the community to improve scientific methods. As the project continues, its focus will be expanded to new aspects of biomedical research.

Homepage ScreenGrab, 30 May 2017:



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