

# THE HEBREW YOUTH UNIVERSITY FOR THE PROMOTION OF SCIENCE EDUCATION IS GIVING ISRAEL'S YOUTH A HEADSTART

Albert Einstein once famously noted "that all our science, measured against reality, is primitive and childlike -- and yet it is the most precious thing we have." His wisdom lives on at the Hebrew Youth University for the Promotion of Science Education which promotes the wonders of science to thousands of school children through high school each year.

One of the most expansive initiatives in all of Israel, The Hebrew Youth University is on a well-directed mission to bring scientific and technological awareness to young people. Its far-reaching research experiences and activities develop creative and analytical thinking specifically in the scientific disciplines. It is a mission that is carried out with passion and a sense of greater purpose.

"We believe that an investment in science will upgrade the whole of one's education and make these students better citizens of Israel!" explained Dr. Osnat Cohen, the Director for The Hebrew Youth University. "In such a small country as ours, our human resources — our brains — are one of our greatest treasures."

The Hebrew Youth University operates as a centralized umbrella for a variety of programs that offer hands-on research and high-level courses to the country's most outstanding students as well as development courses for teachers. Through a dedicated effort to reach out to minority groups including female students, ultra-Orthodox and Arab students, as well as students living in the periphery, The Hebrew Youth University's activities draw the participation of 23,000 students and their teachers annually.

Its success is due to a number of successful partnerships including the Ministry of Education, the Ministry of Science and Technology, and other top research institutions, and companies in Israeli industry. The Belmonte Science Laboratories Center, a unique model for partnership between the Hebrew University, the Jerusalem Municipality, and the Jerusalem Foundation, has been imitated in cities worldwide.

Belmonte, located on the Edmond J. Safra Campus is committed to bringing state-of-the-art research experiments to high school students and their teachers which focus on meeting the requirements of the Israeli national

curriculum in chemistry, biology and computer science.

The Hebrew Youth University places a priority on reaching out to the top science and math students in Israel and in the past five years has more than doubled the number of Excellence Programs it offers. Participation in these programs is selective, and highly motivated students of physics and chemistry undergo a series of rigorous exams to be admitted and can receive academic credit for their participation.

The Hebrew Youth University also offers a wide variety of programming to engage students of all ages in the relevance of science to our everyday lives. Touching on "non-academic" topics, sessions might examine the physics of juggling; the evolution of music from vinyl records to today's digital forms, or how science impacts sports (think: the art of throwing an American football).

"As this is one of our few nonacademic programs, we are really able to deal with topics with which the kids can easily identify," explained Cohen.

*With reporting by Helena Flustleder*

## ASAPH ZYLBERTAL: A NEUROBIOLOGIST IS USING THE LATEST TECHNOLOGY TO INSPIRE HIGH SCHOOL STUDENTS

Asaph Zylbertal, a doctoral candidate in Hebrew University's Department of Neurobiology, sets aside time each week to mentor young students in various science projects as a matter of principle.

"I strongly believe that graduate students have an obligation to be involved in elementary and high school education because science evolves quickly, and we are on the cutting edge of innovation in a way that high school teachers cannot always be," he explained.

This past year, Zylbertal worked with middle and high school students in The Hebrew Youth University's Da Vinci program. Twice a week, he taught two groups of ninth grade students from all over Israel in such endeavors as learning to code the Python Programming Language and then building electronic circuits to interact with their newly built codes. The students were able to use Raspberry Pi, a relatively new computer platform developed for educational purposes and no larger than the size of a credit card to develop their codes.

The projects yielded highly imaginative and innovative results: an automatic irrigation system that turns on when it senses sunlight; and a model parking lot that lets users know through the Internet the number of available parking spots. Zylbertal's doctoral research focuses on the brain's accessory olfactory bulb and the role it plays in processing information related to social interaction in mammals. He completed his master's in the same lab under Prof. Yosee Yarom from the Edmond and Lily Safra Center for Brain Sciences and Prof. Shlomo Wagner from the University of Haifa, after earning his BSc in life sciences.

Zylbertal has long abided by his philosophy to be involved in youth education. He previously worked with teenagers in a psychiatric hospital to excite them about science and most recently taught a weekly science course to gifted disadvantaged youth.



Zylbertal demonstrates an experiment

## DR. TAHANI MALA'BI: A CHEMIST FINDS HER PASSION IN BRINGING SCIENCE TO YOUNG WOMEN

Dr. Tahani Mala'bi was a chemistry student at The Hebrew University with dreams of pursuing a profession in a similar field when she first started teaching in The Hebrew Youth University's, Girls for Excellence program run out of the Belmonte Science Laboratories Center. As their teacher, she had assumed that she would influence the groups of tenth-grade girls who arrived every Sunday from East Jerusalem to conduct research under her guidance in biology and chemistry.

What she didn't expect was that the experience would ignite in her a previously undiscovered passion for education and ultimately change the course of her chosen career path. Today, Mala'bi is the head of the Center for Excellence You-niversity™ in Beit Hanina, established in cooperation with the Jerusalem Municipality and the World ORT Kadima Mada. The Center, which opened in 2014, provides scientific and technological enrichment courses to girls in middle school.

"I am supporting these students by helping them to realize the beauty of science, but it's more than that," she explains. "I show them how to present themselves and their research and I give them the confidence to identify with science and technology."

Mala'bi gained valuable experience working in the Belmonte Center where she eventually rose to manage the "Girls for Excellence" project. She worked with the young students not only on high level scientific research projects, but also tutored them in English and Hebrew, and helped prepare them for their college entrance exams.

Despite her many achievements in education, Mala'bi hasn't left behind her original passion—she is still writing research articles for her doctoral studies under the supervision of HU Organic Chemistry Prof. Israel Agranat.



Mala'bi is leading young girls into science