Q&A with Dr. Ronen Mir

Director of HEMDA Rehovot

Dr. Ronen Mir is the first director of HEMDA Rehovot, a regional Science Learning Center offering advanced science curricula for high school students that is affiliated with the Weizmann Institute of Science. At HEMDA, students seeking to take their matriculation exams at the highest levels in physics and chemistry receive their instruction in those subjects rather than at their own schools. In September, HEMDA Rehovot—which is modeled after the successful HEMDA Tel Aviv school—will begin operating for 10th graders, and within several years it will be housed in its own building adjacent to the Institute campus.

Dr. Mir was previously director of MadaTech, the Israel National Museum of Science, Technology and Space in Haifa. He is an Institute alumnus—he holds PhD and MSc degrees from the Faculty of Physics. He is also a former director of the SciTech Hands-On Museum in Illinois, and was the scientific director of the Clore Garden of Science at the Weizmann Institute.

Dr. Mir, can you tell us what it's like to come back to the place where you were once a student?

It’s very exciting. I have a long relationship with the Institute, even before my graduate studies. I was born in a nearby kibbutz, Kvutzat Shiller, and during my high school days I would skip class to come to the Weizmann Institute. The atmosphere in the Institute was open and friendly to me as teenager. As a child who from age five already knew that he wanted to be a physicist, this was an amazing experience for me.

I did my PhD at the Institute, and after seven years of research abroad, I came back to the Institute as a research fellow. Dr. Moshe Rishpon and Prof. Haim Harari recruited me for the project of establishing the Clore Garden and the Levinson Visitor’s Center. It was during this period that I made the full transition to science education.

What made you want to focus on science education?

I enjoy working with youth. I love teaching and interacting with them. Teaching gives me the feeling of being on a mission, and it’s important for me to give back to the community.

At the SciTech Hands-On Museum [which is affiliated with the U.S. Department of Energy], I took a small historic building, added floors and designed a ‘science garden’ around it, implementing elements from the Clore Garden. At MadaTech I developed the campus and the activities, so that the number of visitors reached over half a million every year.
How is heading HEMDA different from what you’ve done in the past?

It’s starting something new from the ground up. Weizmann Institute President Prof. Daniel Zajfman, who steers this project, recruited me for the goal of educating a generation of world-class physicists and chemists. Science museums focus more on science literacy for the public.

But in one respect I’m doing something similar to what I’ve done in the past: making science exciting. In a recent study on the teaching of physics in Israel, teachers commented on the reasons youngsters choose to study physics. The first reason named was the prestige of the field. The enjoyment they get from studying came in at last place. I think this is a distortion that must be fixed. Overall, the goal is to excite youth about science and technology.

What makes HEMDA special?

HEMDA has high-level labs, which are costly resource to maintain and thus too expensive for most schools. The equipment, the lab staff, the manpower—all of these demand a lot of resources. The teachers will invest significant time in keeping updated about science and in ongoing professional development.

What kind of students will study at HEMDA?

We do not have an acceptance process. The only requirement is that a student wishes to take the 5-point matriculation exam, and that he or she is able to keep up with the work. We want the doors of science to be open to everyone with motivation.

Will the HEMDA in Rehovot be different than the center in Tel Aviv?

A major advantage is the proximity to the Weizmann Institute, which will enable opportunities for scientists, graduate students, and staff from the Davidson Institute of Science Education and the Department of Science Teaching to be involved. It will also lend prestige, of course, and the students of Rehovot and Nes Ziona will benefit.

A history of HEMDA

HEMDA Tel Aviv, the Center for Science Education in Tel Aviv-Jaffa, was founded in 1991 at the initiative of then Weizmann Institute of Science president, Prof. Haim Harari. The center proved to be a great success in the field of physics and chemistry, teaching to outstanding students in most of the high schools in the area, and forged a new model of science education in the whole area. The current president of the Weizmann Institute, Prof. Daniel Zajfman, is the chairman of HEMDA.

HEMDA Tel Aviv was an experiment in regional science education; the idea was that if it worked, it would be the first of many similar regional science education centers across Israel. The experiment indeed succeeded, as is shown in the steady achievements of students in the matriculation exams and their military service: Seventy percent of all HEMDA graduates serve in the elite units of the intelligence corps that specialize in research and development. Twelve percent are recruited into Atudah, the elite ID program that allows exceptional students to enroll in university studies immediately after high school and then serve in the
army in a capacity that takes advantage of their advanced educational level. Many of HEMDA’s graduates go on to become top-performing students in science, engineering and medicine in Israel’s best universities.