

THE WEIZMANN

INTERNATIONAL MAGAZINE OF SCIENCE AND PEOPLE



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A village for the future of biomedicine

The Weizmann Institute is planning a new complex, set to unite science, medicine, and education to shape the future of global health. The envisioned Biomedical Village will comprise five ultramodern buildings, housing the Miriam and Aaron Gutwirth Medical School alongside laboratories dedicated to immunology, regenerative biology, and human-centered, exploratory research.



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Letter from the President

Dear friends,

The Weizmann Institute of Science is not just a place where great research is done—it’s a home. Part of the Weizmann philosophy is that the best minds are able to do their best work when their time and effort are devoted nearly exclusively to their research, in an aesthetic and vibrant environment.

For that reason, we offer on-campus housing to our scientists and students, as well as nearby off-campus housing, so that they are steps away from their labs and classrooms. But there is a need for more housing for our students and postdoctoral fellows. These facilities enable our community members to be near each other—fostering a lively atmosphere of interdisciplinary exchange across our green expanses, in our recreation facilities, and thanks to casual daily interactions.

In these pages, you’ll read about the student community and how they represent the scientists of tomorrow. You’ll see why they are worth investing in.

I also invite you to read about some of our latest research breakthroughs, which are occurring at a rapid pace, despite the uncertain security climate and all the challenges that the Weizmann Institute and the State of Israel have faced over the last year.

I hope you find these stories inspiring, and wish you happy reading about the latest news from Weizmann.

All best,

Prof. Alon Chen
President, Weizmann Institute of Science

The science of a perfect match

Prof. Yitzhak Pilpel has found that yeast cells don't team up at random—they select partners that can produce fitter offspring

A mass mating event in the lab revealed how yeast cells choose partners—and what predicts the success of their offspring. These findings emerged from an experiment of unprecedented scale in the lab of Prof. Yitzhak Pilpel, in which about 10 million yeast cells from roughly 100 strains were brought together,

allowing them to mingle freely and fuse with the partner that attracted them the most.

Familiar from the world of bread-making and alcohol production, baker's yeast can reproduce in different ways. In a nutrient-rich environment, reproduction occurs asexually, with daughter cells "budding" from the surface and carrying complete copies of the mother's cell's genome.

However, if starved, yeast reproduce sexually. They form spores that carry just half of the parent cell's genes, generating two mating types analogous to male and female. When nutrition improves, these spores begin secreting pheromones, triggering a chemical courtship that draws two compatible cells together to fuse and produce a daughter cell whose genome combines contributions from both parents.

Prof. Pilpel and his team in the Department of Molecular Genetics wondered whether yeast, like

more complex organisms, show preferences when choosing a partner. To investigate, the scientists inserted barcodes into each parental strain, along with a "reporter" activated upon fusion, enabling the scientists to identify the parent strains of each resulting daughter and track how often each strain mated with every potential partner.

While humans often struggle to find a partner who is both attractive and a reliable co-parent, yeast cells may have cracked the formula.

Their findings demonstrated that some yeast strains consistently avoided one another and that, when a high-quality food source was available, the yeast tended to select mating partners that would result in daughter cells with enhanced growth and reproductive abilities. When less food was available, fitness of the offspring also increased, but in a manner dependent on the genes carried by the parental strains. As the degree of genetic difference between mating yeast cells increased, fitness of their offspring increased. However, this was true only to a certain point. When the genetic difference between the parental yeast cells was too significant, the fitness of their offspring declined.

These observations suggest that while humans often struggle to find a partner who is both attractive and a reliable co-parent, yeast may already have cracked the formula for the perfect match.

YITZHAK PILPEL IS SUPPORTED BY:

- The Braginsky Center for the Interface between Science and the Humanities
- The Kahn Family Research Center for Systems Biology of the Human Cell
- The Sharon Zuckerman Laboratory for Research in Systems Biology
- The Ben May Professorial Chair



A yeast cell that senses pheromones from the opposite mating type grows a protrusion toward the signal, a process known as "shmooing." When the protrusions of two cells touch, they fuse into a single cell containing the genetic material of both. (Image by Pilarbini)

Body armor with the 'Spiderman' touch

Inspired by nature's own designs, Prof. Ulyana Shimanovich is spinning a new vision for protective gear

As many Israeli soldiers know from personal experience, body armor can be life-saving—but it often comes at a steep physical cost. Depending on the material, protective gear can weigh between 60 and 90 kilos (132-198 pounds), placing a significant burden on those who wear it. This heavy load can slow movement and limit agility, and current designs—largely tailored for the male torso—do not fully address the needs of today's Israel Defense Forces, where 20% of combat soldiers are women.

Prof. Ulyana Shimanovich of the Department of Molecular Chemistry and Materials Science is leading an effort to address this problem. Her lab studies the remarkable self-assembling behavior of natural protein fibers spun by silkworms and spiders.

Known for their exceptional strength-to-weight ratio, these fibers have inspired her to pursue a lab-based initiative that may eventually provide improved protection for soldiers on the battlefield.

Prof. Shimanovich and her team are developing a silk-based composite using advanced materials science tools and chemical techniques. Her "hybrid-weaving" strategy integrates chemically reinforced silk fibers with high-strength synthetics like Kevlar, to create a lightweight, flexible material that offers robust protection



Spider silk may hold the key to the next generation of body armor, but harnessing its potential at scale remains a challenge. (Image from the Shimanovich lab)

against high-velocity projectiles as well as maximum energy dispersion—the "breathability" that keeps fighters cool.

The Shimanovich team's silkworm-derived fibers are reinforced using a proprietary treatment process, resulting in mechanical performance comparable to that of spider silk, widely regarded as one of the strongest natural fibers. While large-scale production of spider silk remains impractical due to spiders' territorial nature, the new approach overcomes this limitation by leveraging abundantly available silkworm silk from the textile industry. This may establish a scalable and sustainable platform for the industrial-level manufacture

of high-performance silk-based materials.

Once the engineered fibers have been developed and tested, Prof. Shimanovich plans to collaborate with Israel's Shenkar College of Engineering, Design and Art to weave them into textiles for military use. The resulting materials will then be submitted to the army for mechanical and ballistic testing.

"Spider silk offers a blueprint for the future of body armor," Prof. Shimanovich says. "Our challenge is turning that promise into a scalable reality."

ULYANA SHIMANOVICH IS SUPPORTED BY:

- The Perlman Family Foundation Founded by Anita and Louis Perlman C-AIM Young Scientist Fund

A chip for the **next pandemic**

At the forefront of biochip technology, Prof. Roy Bar-Ziv is developing tools to help scientists respond swiftly to viral outbreaks

Back in 2020, when scientists were racing to understand COVID-19, Prof. Roy Bar-Ziv of the Department of Chemical and Biological Physics began designing a DNA “biochip” to help drug developers respond more swiftly to dangerous viral outbreaks.

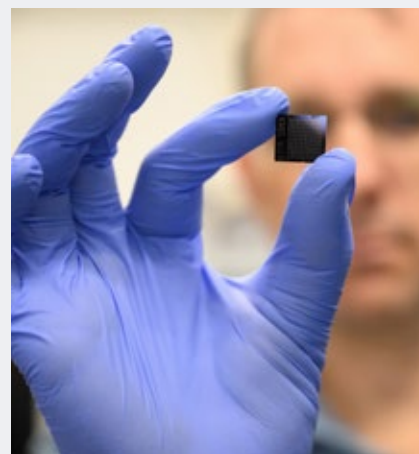
The chip synthesizes viral proteins and fragments, enabling rapid identification of the antibodies that bind to them. By allowing researchers to take a virus’s genetic sequence, generate its proteins directly on the chip, and test antibodies immediately, this technology represents a significant leap in efficiency.

Understanding how strongly antibodies bind—a critical metric for predicting medical impact—has traditionally required producing individual proteins separately and testing them against antibodies, a process that can take weeks. Prof. Bar-Ziv’s biochip streamlines this work: each section of the chip contains a small patch of printed DNA encoding a specific protein or protein fragment, which is then

synthesized by the chip itself. By observing how these proteins interact with antibodies, researchers can quickly determine how firmly an antibody grips its target, with stronger binding signaling a more effective immune response.

Using this approach, the Bar-Ziv team examined the interactions between COVID-19 proteins and human antibodies, revealing that individuals display distinct immune signatures. Some, for example,

The Bar-Ziv team's research offers insights that could prove invaluable in future outbreaks, helping scientists understand how emerging variants may weaken immune defenses in individual patients.



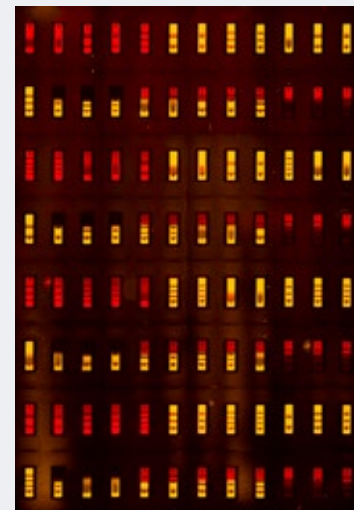
This tiny biochip reveals how strongly antibodies bind to viral proteins.

showed antibodies against the original Wuhan variant of the coronavirus, but not against later variants, such as Delta or Omicron—insight that could prove invaluable in future outbreaks, helping scientists understand how emerging variants may weaken immune defenses in individual patients.

The new biochip technology could also be used to track immune responses of patients over time. Linking chip-generated data with patient histories, it might be possible to identify immunity patterns that could lead to the development of vaccines offering more personalized and effective protection against viral infection.

ROY BAR-ZIV IS SUPPORTED BY:

- The Isak Ferdinand Dwosia Artmann Research Fund for Biological Physics
- The Ilse Katz Institute for Material Sciences and Magnetic Resonance Research
- The Knell Family Institute for Artificial Intelligence
- The Erich Klieger Professorial Chair in Chemical Physics



Sizing up a giant

Prof. Yohai Kaspi is measuring the dimensions of Jupiter with unprecedented precision

For over 50 years, scientists believed they understood the size and shape of Jupiter, the solar system’s largest planet. Now, research by Prof. Yohai Kaspi of the Department of Earth and Planetary Sciences has revised that knowledge, drawing on new data and unique technology developed at the Weizmann Institute to offer a clearer view of this distant giant.

Until recently, estimates of Jupiter’s shape relied on just six measurements made almost five decades ago by NASA’s Voyager and Pioneer missions, which transmitted radio beams back to Earth. Decades later, NASA’s Juno mission—launched in 2011 and orbiting Jupiter since 2016—has dramatically expanded what can be learned from such signals.

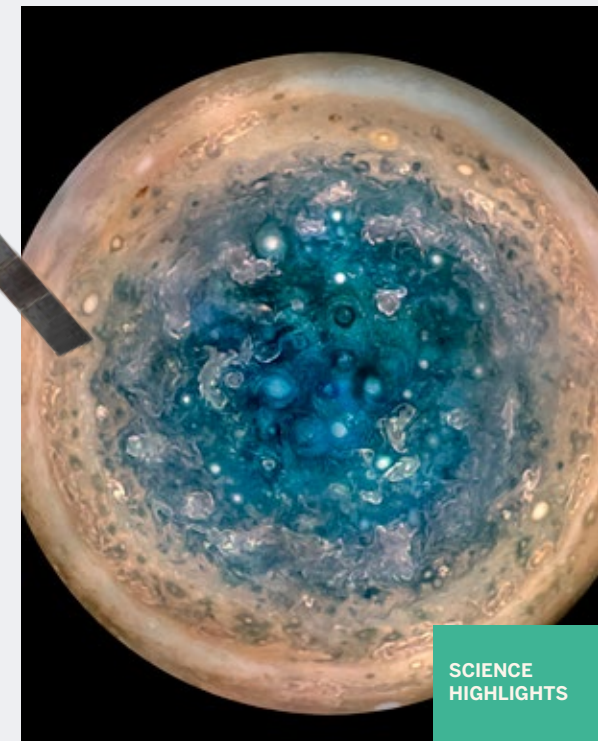
Due to Jupiter’s orbit around the Sun, since 2023 Juno moves behind Jupiter, from Earth’s perspective,

every orbit (i.e., every 33 days). As the spacecraft moves behind the planet, its radio signals are blocked and bent by Jupiter’s atmosphere. Thanks to a new methodology developed in their lab, Prof. Kaspi and his team can analyze how these radio signals changed, and use their measurements to map Jupiter’s temperature and density with unprecedented precision, producing the clearest picture yet of the gas giant’s size and shape.

New findings help resolve long-standing discrepancies in models of Jupiter’s gravity and atmospheric dynamics.

Their findings reveal that Jupiter is slightly smaller than previously estimated—about 8 km narrower at the equator and 24 km flatter at the poles. While subtle, this difference is scientifically significant, as it helps resolve long-standing discrepancies in models of the planet’s gravity and atmospheric dynamics, particularly those involving the powerful winds

Jupiter’s south pole as seen by NASA’s Juno spacecraft at a close pass. (Photo courtesy of NASA)



SCIENCE HIGHLIGHTS

that shape its turbulent weather systems. The new data offers scientists a deeper understanding of the forces roiling beneath Jupiter’s cloud cover.

“Textbooks will need to be updated,” Prof. Kaspi says. “Our work has implications for understanding the structure of gas planets in general, since Jupiter serves as a standard reference for the study of gas giants within the solar system and beyond.”

YOHAI KASPI IS SUPPORTED BY:

- The Helen Kimmel Center for Planetary Science
- The Knell Family Institute for Artificial Intelligence

A collaborative leap in AI performance

Prof. David Harel's lab achieves a milestone in getting two language models to join forces and 'think' faster

Just as people from different countries speak different languages, AI models generate their own distinct "languages"—unique sets of tokens understood only by each model. Until recently, this meant that models developed by different companies could not communicate with one another. Now, Weizmann computer scientists, together with colleagues from Intel Labs in Israel, have introduced a new set of algorithms that overcome this barrier and significantly accelerate large language models (LLMs)—the technology powering artificial intelligence systems like ChatGPT and Gemini.

Work led by Nadav Timor, a PhD student in the lab of Prof. David Harel of the Department of Computer Science and Applied Mathematics, builds on a method known as speculative decoding, in which a small, fast AI model with relatively

limited knowledge makes a first guess in response to a user's query, and a larger, more powerful—but slower—model then reviews and refines the answer if needed. The mathematics behind this method ensures perfectly accurate results. However, it has typically required both the small and large models to "speak" the same language.

Weizmann computer scientists, together with colleagues from Intel Labs, have introduced a new set of algorithms that accelerate large language models—the technology powering AI systems like ChatGPT and Gemini.

The researchers' new algorithms remove this limitation, allowing developers to seamlessly pair any

small model with any large model. First, they designed an algorithm that allows an LLM to translate its internal token language into a shared format that other models can understand. A second algorithm then prompts collaborating models to rely on tokens with the same meaning, similar to how words like "banana" and "internet" are nearly identical across different human languages.

Their combined approach speeds up LLMs by up to 2.8 times, dramatically reducing computational costs.

"This advance solves a core inefficiency in generative AI, and the impact is far from theoretical," asserts Oren Pereg, a senior researcher at Intel Labs and co-author of the study, presented at the International Conference on Machine Learning in Vancouver, Canada. "Our algorithms are already incorporated into hundreds of thousands of projects, where they allow developers to build faster and smarter applications."

DAVID HAREL IS SUPPORTED BY:

- Magnus Konow in honour of his mother Olga Konow Rappaport
- The William Sussman Professorial Chair of Mathematics

When colonies collapse

A new approach by Prof. Assaf Vardi explains what happens when viral infection causes massive algal blooms in the ocean to disappear

The ocean is our planet's life-support system, regulating climate and sustaining an infinite variety of species, including our own. At the foundation of ocean food webs are algal blooms: vast colonies of microscopic algae that harness sunlight and are responsible for nearly half the oxygen generated through photosynthesis. Algal blooms play a key role in stabilizing our climate, absorbing some 50 billion tons of atmospheric carbon annually and preventing the buildup of the heat-trapping greenhouse gases associated with climate change.

Algal blooms can span thousands of miles across the ocean surface—some are visible from space—and can grow 50 meters deep. Despite their size, they are vulnerable to viruses that can infect a bloom and cause it to collapse and disappear within days.

Now, Prof. Assaf Vardi and postdoctoral fellow Dr. Constanze Kuhlisch of the Department of Plant and Environmental Sciences have identified 19 previously-unrecognized metabolites—chemical compounds that emerge during infection-driven algal bloom collapse and reveal how viral infection unfolds over time.

The scientists also showed how viral infection causes algal cells to



Cells of photosynthetic algae come together to form algal blooms on the ocean surface.

Algal blooms play a key role in stabilizing our climate, absorbing some 50 billion tons of atmospheric carbon annually and preventing the buildup of the heat-trapping greenhouse gases associated with climate change.

SCIENCE HIGHLIGHTS

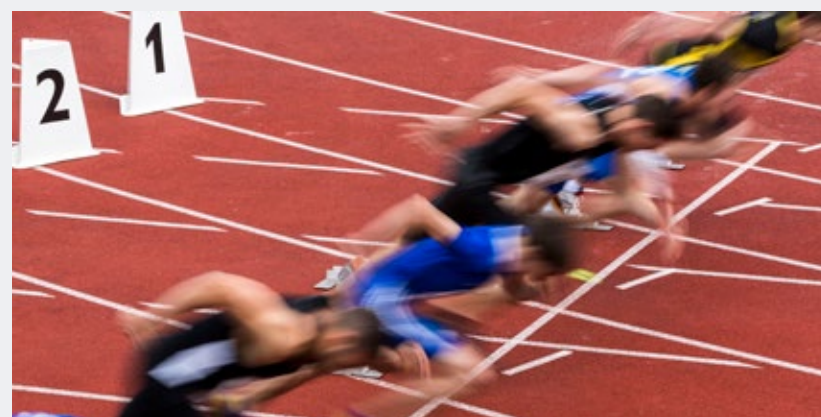
rupture, releasing their contents as dissolved organic matter, thereby redirecting energy and nutrients back to microbes and affecting carbon cycling in the ocean. Investigating blooms in four regions of the Atlantic Ocean, the team used varying levels of the metabolites they discovered to map each bloom's distinct chemical "footprint," thereby characterizing the course of infection.

A more comprehensive understanding of how collapsing algal blooms "misdirect" their chemical contents into the ocean and away from food production is essential to grasp the impact viral infections have on the fate of carbon in marine

ecosystems and the atmosphere. The findings achieved by Prof. Vardi and Dr. Kuhlisch, published in the prominent journal *Proceedings of the National Academy of Sciences*, may help establish a new metric for modeling how viral infection affects the marine carbon cycle, and how this dynamic contributes to climate change.

ASSAF VARDI IS SUPPORTED BY:

- The de Botton Center for Marine Science
- Scott Eric Jordan
- The Tom and Sondra Rykoff Fund for Plant, Environmental, and Sustainability Research
- The Bronfman Professorial Chair of Plant Science
- The Beck Research Fellow Chair supports a staff scientist in Prof. Vardi's lab



The way back to the bench

After a missile strike devastated their labs, scientists from the Sussman Building found strength in the people and new spaces around them

By Jennifer Racz

Two weeks after Dr. Nir Galili, a geochemist completing his postdoctoral work at ETH Zürich, signed his contract to join the Weizmann Institute, two Iranian ballistic missiles struck the Weizmann campus. The shockwaves from the attack gutted the Sussman Family Building for Environmental Sciences, home to the Department of Earth and Planetary Sciences and Dr. Galili's future lab. The next morning, a colleague shared photos of the destruction with him, saying everything was gone.

"I remember looking out the window in Zürich and seeing snow," he recalls. "I had no idea what this news really meant."

Weeks later, when he arrived in Israel with his wife and three young children—all raised in Switzerland, unprepared for what awaited—reality

hit hard. The Sussman Building was ravaged, equipment was lost, and his new colleagues—the scientists working in that building—had scattered across campus to other facilities.

To make matters worse, the family's intended housing was also damaged, and they were put in temporary accommodations alongside other scientists rendered homeless by the strike. Soon after, he was called up for military reserve duty. Dr. Galili's experience is one of the many Weizmann stories of displaced scientists, ruined labs, and breathtaking resilience.

The Institute's response proved surprisingly simple: keep science moving forward.

An exercise in ingenuity

Two buildings took direct missile hits in the June 2025 attack: the Ullmann Building of Life Sciences, the center of cancer research on campus, and the André Deloro Building for Advanced and Intelligent Materials, a chemistry facility in its final phase of construction after years of development. The shockwaves wreaked havoc across the campus, hitting some 60 buildings, with the scale of destruction ranging from shattered windows to complete ruin.

Situated between the two points of impact, the Sussman Family Building sustained catastrophic damage.



"I cannot imagine a better environment to do science than Weizmann," says Dr. Nir Galili.

What followed was a logistical feat of extraordinary scale. Members of the Department of Earth and Planetary Sciences were dispersed among three alternative buildings—the Helen and Milton A. Kimmelman Building, the Perlman Chemical Sciences Building, and the Nella and Leon Benoziyo Building for Biological Sciences—where researchers borrowed benches and shared offices with colleagues, while the Earth and Planetary Sciences (EPS) complex, a temporary village of prefabricated

modular offices, was set up at the edge of campus.

Happy hours were held to bring everyone together, and bikes were purchased to help scientists and students move between offices and temporary labs, now a considerable distance apart. When the department needed a place to gather for seminars, another mobile unit was promptly delivered and assembled.

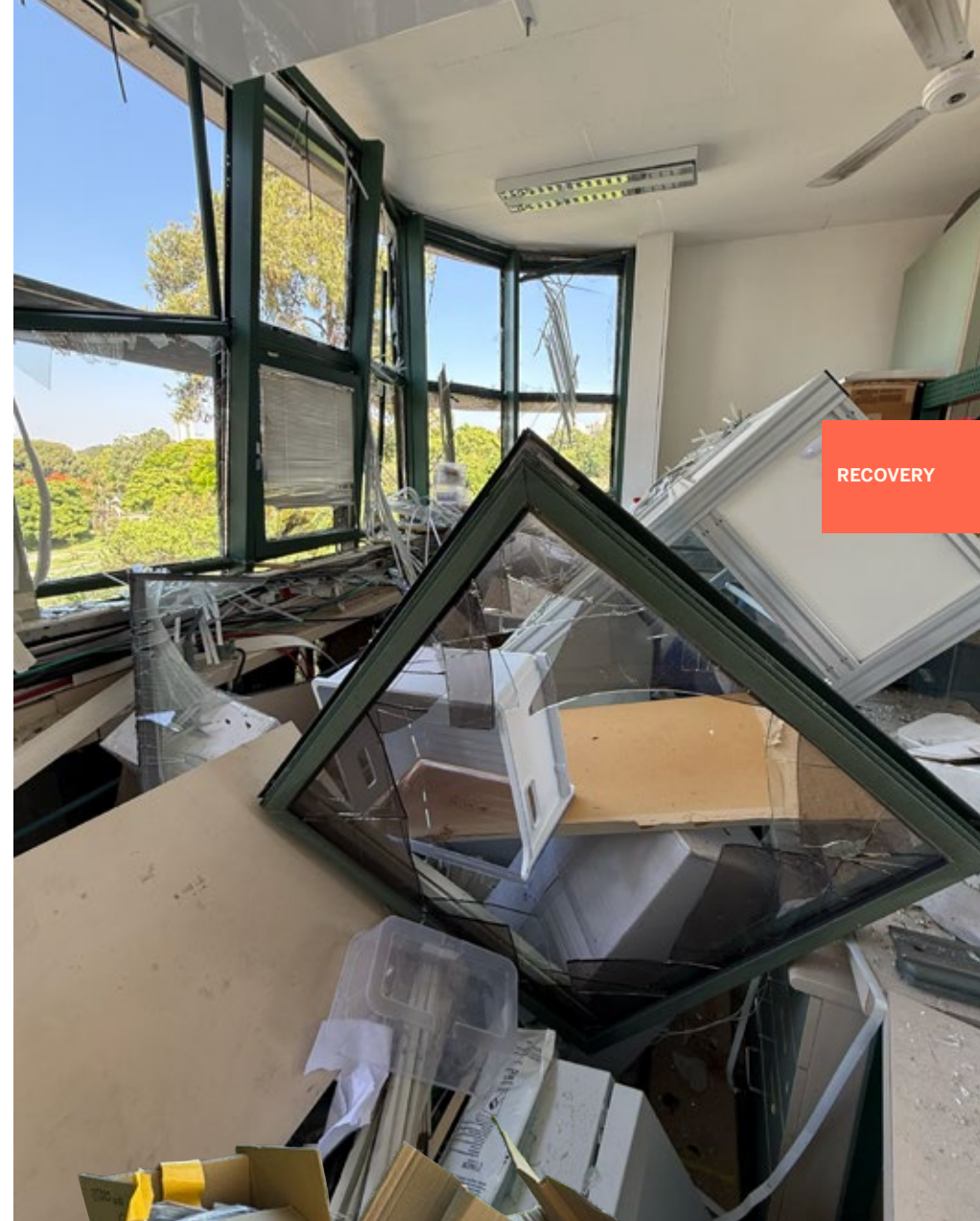
"There was an incredible rush of people to help us, saying, 'We want you to do science, what do you need?'" Dr. Galili recalls. From the Weizmann Institute leadership to the Dean of the Faculty of Chemistry, to the administrative staff and building and project managers, it was all hands on deck to set up temporary labs, plan new ones, and manage the department's general needs.

As a result of their herculean efforts, within five months Dr. Galili had new (temporary) lab space, complete with the equipment he needed to conduct his research—a feat unheard of, even under normal circumstances. "To this day, people still ask me how they can help, and I meet with all kinds of people I would have never known otherwise."

Behind these efforts were individuals like Dror Barzilay, the department's coordinator for maintenance and logistics. An engineering technician who has been at the Weizmann Institute for almost 30 years, Dror found himself compressing what would typically take 18 months of laboratory planning into a fraction of that time.

Seeing Sussman in ruins was devastating, but as planning began, something shifted.

"I understood that we will come out better and stronger from this experience. And it keeps me going,"





When computational biologist Dr. Yinon Bar-On was temporarily hosted in the lab of a theoretical physicist, he found himself exploring fundamental questions far outside his own field.

he shares, adding, “It’s a gift to work with the scientists at Weizmann. I see how they invest their time and energy to advance science, and it energizes me.”

Strength from solidarity

Dr. Yael Kiro, a geochemist whose highly specialized laboratory had been built just four and a half years before the attack, observed the damage with a broken heart. Springing into action to save what she could, she and her team moved groundwater samples into safe cabinets offered by scientists from other labs, ultimately saving 99% of them—including samples she had just gathered with colleagues from Spain and Switzerland through the Water4All Partnership, co-funded by the European Union. The specimens are being examined to give the scientists a clearer picture of how water and rock interact underground over time—and how seawater infiltrates the freshwater aquifers that coastal communities rely on.

Despite the disruption and loss, Dr. Kiro managed to set up a makeshift lab in her temporary space—no small feat given that even a single grain of dust can contaminate a natural sample. The team invested in a particle meter to monitor air quality and spent several months getting the space clean enough to resume experiments.

She even discovered machinery in the Kimmelman Building she did not know existed on campus, saving her having to travel to the Geological Survey of Israel office in Jerusalem for this very same equipment.

Colleagues from the larger scientific community extended their support. Researchers from other institutions called to volunteer lab space and equipment, asking how they could help. Taking them up on their offers, Dr. Kiro began sending her students to partner labs in Israel and abroad—to the Max Planck Institute for Chemistry in Mainz and the Carl von Ossietzky University of Oldenburg in Germany, and others to the Hebrew University of Jerusalem and the Geological Survey of Israel—enabling them to continue their studies and enriching their experiences.

Dr. Kiro found that conducting research during times of war called for creative solutions and independence—developing theoretical projects for students who could not come into the lab and learning new methods for field work over the phone when travel outside of Israel was not possible. “It was a terrible thing, but the solidarity I felt warmed my heart and really kept me going,” she shares.

A shift in chemistry

For Dr. Galili, the upheaval prompted an unexpected scientific pivot. His original research—using oxygen isotopes to study geological formations and ancient climate—required permanent, fixed laboratory

space and machines that take months to calibrate and years to analyze data.

Given the new reality, and with the Institute’s full support, he shifted from oxygen to studying stable carbon isotopes, examining how organic matter interacts with minerals on the ocean floor—a phenomenon that determines whether buried carbon remains there or is released into the atmosphere as CO₂.



“It was a terrible thing, but the **solidarity** I felt warmed my heart and really kept me going,” Dr. Yael Kiro shares.

“Of all the organic matter that enters the ocean, just 0.1% gets buried and protected by minerals rather than breaking down,” he explains. “That fraction sounds negligible. It isn’t. If it were released and oxidized into CO₂, the resulting increase in greenhouse gases would be incompatible with life as we know it.”

That sliver of protected carbon, Dr. Galili now believes, is a critical lever in regulating the composition of our atmosphere over geological time. “While none of it was my original plan, I cannot imagine a better environment to do science than Weizmann.”



RECOVERY

Between two worlds

Computational biologist Dr. Yinon Bar-On, a principal investigator who studies the global carbon cycle and joined the Institute in 2025, faced a different kind of disruption to his work. Though his computer-based research can technically be done anywhere with the right software and a high-speed internet connection, he felt the displacement deeply in the collaborative and social culture he had experienced during his short time in Sussman. Scientists were split between their temporary labs and the

EPS complex, resulting in a quieter, more isolated experience.

A silver lining came when he was briefly hosted by Prof. Eran Bouchbinder, a theoretical physicist in the Department of Chemical and Biological Physics. Here, Dr. Bar-On found himself exploring fundamental questions far outside his own field, including how cells sense mechanical forces exerted on them and how things break.

When called up for reserve duty, he still held calls with colleagues at Caltech and the Max Planck Institute, sometimes in uniform. “It’s an interesting experience,” he shares,

“to focus on running a meeting while you know that something could happen at any moment to take you back to the war.”

When asked about his strategy in managing the upheaval, Dr. Bar-On says with characteristic calm, “I just keep doing what I do. Every moment I can work makes me happy.”

Bigger and better

Restoration of the Sussman Family Building is well underway. The construction team has completed the internal structural framework of



Reconstruction of the Ullmann Building of Life Sciences, the center of cancer research at the Weizmann Institute.

ONE YEAR LATER: REBUILDING WEIZMANN

June 15, 2026, marked one year since two Iranian missiles hit the Weizmann campus, forcing scientists and students from their labs, classrooms, and homes. The response from Institute leadership and worldwide friends was immediate. While reconstruction got underway, research continued through a network of temporary spaces, shared facilities, and creative workarounds. Today, 90% of affected buildings have been rehabilitated and 70% of damaged equipment has been repaired or replaced. Scientists are returning to their own labs, while collaborations forged through shared spaces on and off campus have opened new avenues of inquiry.

The rapid response was made possible by the generous contributors to the **Weizmann Institute Emergency and Recovery Fund**, whose philanthropic support helped sustain research, restore essential infrastructure, and accelerate the Institute's recovery.

the offices and labs and have begun to install the electrical wiring. They expect to be finished by summer 2027.

When Dr. Galili moves in, he plans to pursue both his original and newly developed lines of research—with renewed purpose, knowing that his work is stronger and that his lab is better, thanks to the support of people who refused to let science stop. Dr. Kiro agrees. Summing up her experience, she reflects, “At Weizmann we are driven by the directive to just do science. It is our purpose and why we are here. They really gave me everything I need to do the best science possible.”

YINON BAR-ON IS SUPPORTED BY:

- The Diane and Guilford Glazer Foundation Impact Grant for New Scientists

Yael Kiro is supported by:

- The Rowland and Sylvia Schaefer Career Development Chair in Perpetuity

RECOVERY

Revving up the quantum engine

A new institute at Weizmann is poised to shape the future of quantum technologies

By Sandy Cash

In laboratories across the Weizmann Institute, researchers are coaxing nature into breaking its own rules—particles existing in two places at once, information leaping across space, reality behaving more like poetry than physics. It may sound like science fiction, but this strange quantum world is already laying the groundwork for technologies that could transform medicine, computing, communications, and our understanding of the universe itself.

Quantum mechanics is a set of laws that explains the behavior of microscopic particles such as atoms, electrons, and photons. For over a century, ever since Austrian physicist Erwin Schrödinger introduced an equation that reimagined particles not as tiny billiard balls but as rippling waves of possibility, this field has been expanding our understanding of reality.

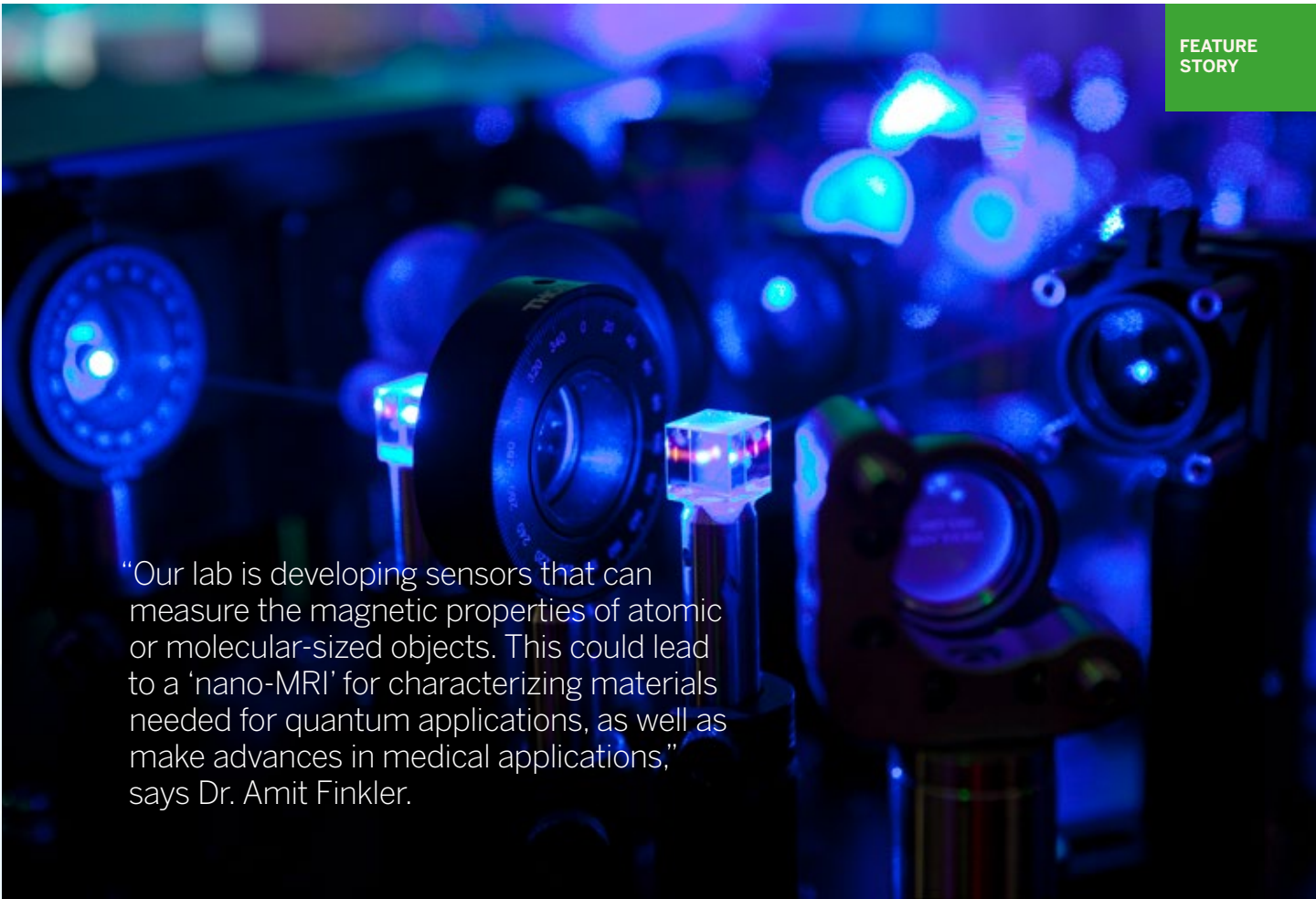
Yet it's still not easy to wrap your head around quantum concepts such as the idea that objects can exist in multiple locations simultaneously, or—as Schrödinger informed us with the help of his famous thought experiment—that a cat in a box can be both alive and dead until observed.

At Weizmann, scientists are working to clarify key quantum conundrums while paving the way for cutting-edge quantum technologies. The extraordinary promise of this research has inspired the launch of a major initiative on campus: an institute for quantum physics.

Named by his children in honor of the late Mandy Moross—a visionary Weizmann benefactor who passed away this year—the Edna and Mandy Moross Quantum Institute will strengthen Weizmann's quantum ecosystem at a pivotal point in the history of science.

"It was just 25 years ago that researchers demonstrated the first logical gate between qubits, a basic building block of quantum computing. A qubit is a unit of quantum information that—unlike the 0s and 1s that encode information in everyday, classical computers—can exist in a combination of 0 and 1 at the same time," says Prof. Nir Davidson, from the Department of Physics of Complex Systems, who uses lasers to manipulate super-cooled atoms into "traps" that can store quantum information.

"Ten years later, we saw the advent of the first multi-qubit systems, but they were unstable. Luckily, around that time, mathematicians found a way to prevent computational errors without causing quantum information, which is encoded as a range of probabilities, to 'collapse' into a single value. This was a crucial breakthrough that brought us to where we are today: the moment in history when practical quantum computing is just beyond the horizon."



"Our lab is developing sensors that can measure the magnetic properties of atomic or molecular-sized objects. This could lead to a 'nano-MRI' for characterizing materials needed for quantum applications, as well as make advances in medical applications," says Dr. Amit Finkler.

A high-stakes race

The global race to establish quantum supremacy is of profound strategic importance. Nations are engaged in a contest in research laboratories with scientists leading the charge. The stakes couldn't be higher; emerging quantum knowledge is reshaping security for countries and consumers alike.

"Quantum computers will be able to crack many of the codes we use to keep our information secure," says Dr. Serge Rosenblum of the Department of Condensed Matter Physics, adding that such breaches could compromise military communications or be used to get hold of digital currency on a vast scale. The risk is so extreme that when Google recently published a

paper describing progress made in closing the security gap, it left out any description of what the Google scientists had actually done. "Safety depends on who gets their hands on quantum knowledge first; if it's bad actors, there will be more crime and more chaos," he adds.

At the same time, this strategic focus on quantum underscores Weizmann's growing reputation as a global leader in the field. Dr. Yiwen Liu, who joined the Institute as a postdoctoral fellow after finishing her PhD in Beijing, is a case in point. Now working in the lab of Prof. Haim Beidenkopf in the Department of Condensed Matter Physics, she uses advanced microscopy to study the properties of quantum materials.

"During my doctorate, I learned a lot from the high-quality papers

published by Weizmann scientists. I reached out by email and was so happy to come. The communication between groups is excellent, and I have everything I need to move forward in my research," Dr. Liu says.

Building the new quantum reality

Progress across campus has been remarkable. In 2022, a team led by Prof. Roee Ozeri, in the Department of Physics of Complex Systems, built Israel's first quantum computer—one of only about 30 such machines in the world at the time. A larger, more powerful system, dubbed "WeizQC"—named in tribute to WEIZAC, one of the world's first computers, built on the Weizmann

campus in the 1950s—is now in the works.

Elsewhere, Dr. Amit Finkler of the Department of Chemical and Biological Physics is advancing quantum sensors capable of measuring quantities such as magnetic fields or temperature on the nanoscale and with unprecedented precision.

“Quantum theory hasn’t changed much over the last century, but recent technological advances have allowed quantum mechanical properties to be harnessed in practical devices that control and manipulate individual qubits in a remarkable way,” Dr. Finkler says. “In our lab, for example, we are developing sensors that can measure the magnetic properties of atomic or molecular-sized objects. Eventually, this could lead to a ‘nano-MRI’ for characterizing materials needed for all sorts of quantum applications, as well as make advances in medical applications.”

Staff scientist Dr. Nitzan Akerman from the Ozeri lab harnesses quantum principles to measure something else: time.

“A clock is something that counts ‘ticks,’ and the more perfectly regular ticks are, the better the clock,” he explains. “In the quantum world, ticks come from the precise frequencies at which electrons inside atoms jump between energy levels. In our research, we’ve used ions—atoms that have gained or lost electrons—to build a clock capable of comparing and measuring tiny differences in the ‘tick rate’ of different atomic species.”



“This new quantum institute is expected to be a major generator of future technologies, and will facilitate international ties between Israeli scientists and quantum experts around the world,” says Prof. Roee Ozeri.

The precision of Dr. Akerman’s clock could make it an important tool for science labs of all kinds. “The universe may be full of dynamics we haven’t noticed because their weak physical effects are so subtle,” he says. “Quantum clocks could change that, leading to fascinating discoveries or even entirely new disciplines.”

A win for science

The quantum community at Weizmann is already fueling economic growth. Four startup companies have emerged from intellectual property in the last three years, attracting seed investment of over \$50 million, with additional ventures now in development.

“The Edna and Mandy Moross Quantum Institute is expected to be a major generator of future technologies,” Prof. Ozeri says. “Not only will this be a win for science, but it will facilitate international ties between Israeli scientists and quantum technology experts around the world.”

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FEATURE
STORY

FRAMEWORK FOR DISCOVERY

The new Edna and Mandy Moross Quantum Institute will support research related to quantum sensing, quantum computing and information, quantum materials, and advanced tools for quantum imaging and the manipulation of light-matter interactions. Guiding Weizmann’s academic curriculum in these rapidly evolving fields, the Moross Quantum Institute will actively recruit outstanding students and postdoctoral fellows, oversee technical infrastructure, and foster academic and industrial collaborations that will ensure Weizmann’s continued leadership within the global quantum research community.

The Moross Institute will establish centers dedicated to key quantum-related topics and promote scientific progress through internal calls for proposals to be funded by competitively awarded research grants. Complementing these

efforts, the Institute hosted a summer school for undergraduate and MSc students, and will launch a Quantum Hub and Fellows Program.

Modeled on Weizmann’s successful AI Hub for Scientific Discovery, the Quantum Fellows Program will bring academic and industry innovators to campus for limited residencies, where they will teach, share expertise, and collaborate with members of the Weizmann community at all levels—from graduate students to faculty members seeking to integrate quantum tools and methods into their work.

Through these diverse activities, the Edna and Mandy Moross Quantum Institute will position Weizmann at the forefront of quantum research while providing students with the experience they need to contribute to the emerging quantum technologies poised to change lives for the better.

From student to scientist



Supporting the next generation at Weizmann, where home meets discovery

“Doing science is a creative process. It’s a bit like being an artist,” says Prof. Maya Schuldiner, Dean of the Weizmann School of Science, the academic arm of the Weizmann Institute. “To do good science one needs to be calm, thoughtful, creative, and in a good state of mind. At the Weizmann School of Science, we see our role not only as providing an outstanding academic environment but also as investing in the personal and financial support systems that allow creativity to flourish. This is what allows great science to happen.”

For the 1,800 students and postdoctoral fellows at the School of Science, this means tuition-free education and a living stipend—affording them the ability to focus solely on their studies and research. This model encourages young researchers to join labs according to their own scientific interests and not based on the financial capacity of a particular lab. “This allows them to do the research they’re most excited about,” adds Prof. Schuldiner.

Hundreds of students and postdocs call Weizmann not only their academic home, but also their “true” home, by making the campus and nearby parts of Rehovot their place of residence. This proximity allows them to avoid lengthy commute times and easily visit their labs and check on experiments at odd hours.

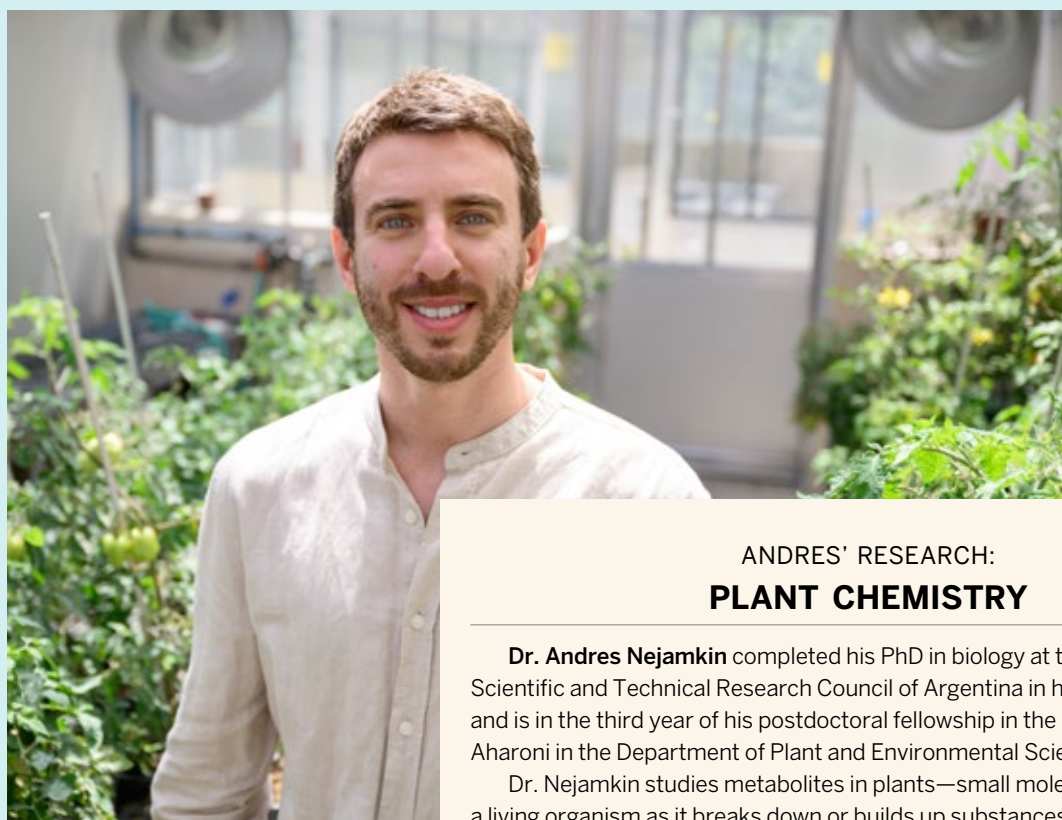
It also provides access to comprehensive support: numerous student groups and social activities, from sports teams to photography and bird watching clubs, are open to all; and they can join the recreation center on campus at a subsidized cost, equipped with pools, a gym, and exercise classes. There are also nursery, kindergarten, and after-school care facilities on campus, offering convenient childcare for parents of young kids.

Together, these resources form part of a broader ecosystem that nurtures the next generation of scientific leaders—one that extends beyond the laboratory to encompass well-being, family life, and community. Fostering a healthy, supportive environment is particularly important for internationals, who make up over 20% of all students and postdoctoral fellows at Weizmann.

“International students and postdocs are, in a way, our most sensitive group because they don’t have a family support system here,”

explains Prof. Schuldiner. “They come into a country that is very different to what they are used to. The language is different. The culture is different. As outsiders, dealing with the bureaucracy and government offices can be quite difficult. Housing is an extremely important part of feeling at home at Weizmann, allowing them a much softer landing into this crazy country that is Israel. When they land, they arrive at an apartment that is already furnished and fully functional. The next day they can already start working on their scientific endeavors. And start integrating into our community and creating their own support systems.”

“We see our role as not only providing an outstanding academic environment but investing in the personal and financial support systems that **allow creativity to flourish**,” says Prof. Maya Schuldiner, Dean of the Weizmann School of Science.



ANDRES' RESEARCH: PLANT CHEMISTRY

Dr. Andres Nejamkin completed his PhD in biology at the National Scientific and Technical Research Council of Argentina in his home country, and is in the third year of his postdoctoral fellowship in the lab of Prof. Asaph Aharoni in the Department of Plant and Environmental Sciences.

Dr. Nejamkin studies metabolites in plants—small molecules produced by a living organism as it breaks down or builds up substances. Metabolites give plants their color, aroma, and the flavor of their fruit, as well as resistance to different pathogens.

One of his projects explores how metabolites move from bacteria to plants, part of another area of study in the Aharoni lab that examines how plants' roots interact with the soil microbiome. He hopes to find a way to apply something to plant roots that will activate genes, causing a plant, for example, to send a defense metabolite to its leaves that will protect it from bacteria or fungi, a development that would be key to food crop stability.

Despite initial concerns about moving to Israel ("It's the Middle East, it's war, everything is really strange"), Dr. Nejamkin says he is happy he decided to pursue his postdoctoral studies here.

"It was the best decision. The building where I work is amazing. All the facilities are amazing." He recalls how another Argentinian in the Aharoni lab told him how much flexibility they are given in pursuing their research. "For me, that was incredible."

the Department of Plant and Environmental Sciences, where he studies specialized metabolites that give plants their colors, aromas, and flavors, and in some cases protect them from pathogens.

He and his wife Constanza were offered housing in a unit owned by

the Institute, in an apartment building just off campus. "I have a lot to say about the housing, because it's amazing," he shares.

From the day they arrived and picked up their keys, Andres says, everything "worked perfectly."

He typically arrives at the lab by 8:30 or 9 a.m., has lunch at the San Martin Restaurant, and continues his research until early evening. In his free time, he works out at the gym on campus, and in the summer enjoys the pool and recreation center with Constanza. On Thursdays, they often mark the start of the weekend at Belkind Bar, just steps from the main gate. Over time, they have built a close circle of friends, both Latin American and Israeli.

However, as postdoctoral housing is allocated for a limited period of time to accommodate incoming researchers, the couple had to begin searching for a new place when their first year came to an end. They soon found themselves apartment hunting during a period of regional uncertainty, which made an already

complicated process that much more difficult.

"I couldn't sign a lease because I didn't know what was going to happen," Andres recalls. The couple decided to take a short break abroad, and when they returned, Weizmann extended their housing for another year.

The armed conflicts during this period have been among the most stressful aspects of their time in Israel. Still, Andres notes that the Institute made a point of checking in, particularly to see how his wife was coping. They are also fortunate that their apartment is equipped with an in-home shelter, allowing them to remain safely inside during nighttime sirens. "Without sleep, you can't work," he says.

The couple has filled their place with paintings, rugs from trips to Jerusalem, and—appropriately—plants.

"If I need something, I can call Weizmann, [even] on the weekend. Coming from so far away, we were super afraid—we had no idea what we'd find. But everyone was super nice. We felt like the Institute was embracing us.

"I said to my wife, 'Weizmann deserves the best I can do, as much energy as I can put in. They're doing so much [for me] that I'll happily work for them,'" Andres shares.

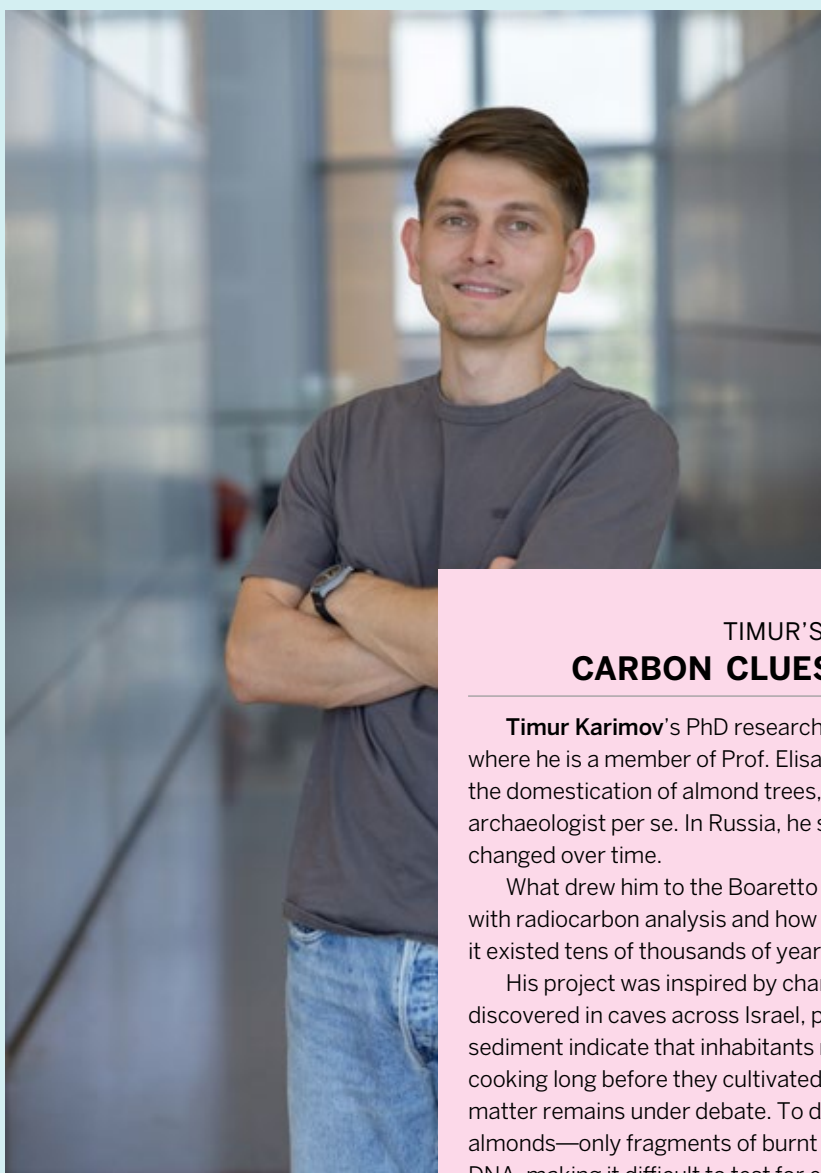
Between life and lab

This ability to make such an easy journey from home to lab—so central to the pace and intensity of research—is not always possible, however.

Renderings of the International Residential Campus (left) and a new multi-building complex (right), which together will add around 900 on-campus housing units once completed in a few years. (Mochly-Eldar Architects and Kimmel Eshkolot Architects, respectively)



FEATURE
STORY



When Timur Karimov, a Russian PhD student in the group of Prof. Elisabetta Boaretto in the Scientific Archaeology Unit, began his studies at the Weizmann Institute, he was living in Haifa with his partner, Dima.

Because no student housing units were available for them, Timur commuted to Rehovot every day. From their home in the Carmel neighborhood of Haifa, it took him

40 minutes to reach the train station, followed by a two-hour journey each way.

The distance quickly began to shape his days—not just logistically, but academically. Time that could have been spent in the lab was instead spent commuting, making it harder to sustain the focus and continuity that scientific research often demands.

“I felt like I’d get to the lab, read two papers, and then go back to Haifa. It was terrible,” Timur says. The Weizmann Student Housing Office soon offered him a room in a

TIMUR’S RESEARCH: CARBON CLUES FROM THE PAST

Timur Karimov’s PhD research in the Scientific Archaeology Unit, where he is a member of Prof. Elisabetta Boaretto’s group, focuses on the domestication of almond trees, but he doesn’t see himself as an archaeologist per se. In Russia, he studied river systems and how they changed over time.

What drew him to the Boaretto lab, Timur says, was the group’s work with radiocarbon analysis and how it can be used to study nature, even as it existed tens of thousands of years ago.

His project was inspired by charcoal remnants from almond trees discovered in caves across Israel, particularly in the north. Layers of sediment indicate that inhabitants may have used almond wood for cooking long before they cultivated or even harvested nuts, although the matter remains under debate. To date, these sites have not yielded any almonds—only fragments of burnt almond wood, which do not provide DNA, making it difficult to test for elements that would indicate whether the trees had been cultivated.

“Wild almond seeds usually contain cyanide, which is toxic. DNA would allow us to distinguish between sweet and bitter varieties [of almonds],” Timur explains.

Building on their research, which identified differences in wood anatomy depending on tree species and the part of the trunk sampled, he and his colleagues determined that the burnt fragments found in caves appeared to come from the base of the trees. This insight, if accurate, would mean that inhabitants felled trees for fuel rather than simply gathering branches and twigs. If cave dwellers were cutting down trees 40,000 or 50,000 years ago, then they were already altering their environment, challenging the established timeline of when humans began changing their surroundings to meet their needs.

dorm on campus, though it could not accommodate his partner or their pet dog. Faced with continuing the daily commute, Timur accepted the room and lived there for about nine months on his own, returning to Haifa on weekends.

When the lease on their apartment expired, Timur and Dima found a new place in Rehovot about 15 minutes from campus. The apartment had seen few updates over the years and came unfurnished, requiring the couple to set it up from scratch, a service usually provided or subsidized for those who get campus housing.

Living nearby has certainly made Timur’s routine more sustainable, bringing his work and daily life into closer alignment and allowing him to devote more of his time and energy to research. He bikes to campus, arriving at the lab by 9 or 10 in the morning and staying until at least 7 or 8 at night. But he is still facing the high cost of rent.

“We had a different picture of a high-tech country. Then we came and saw the rental market and were surprised,” Timur says, noting that he has encountered landlords charging substantial rent for very little space.

| Housing within reach

Demand for housing among graduate students and postdoctoral fellows continues to far outpace availability, even as the Weizmann Institute invests in expanding its options both on and off campus. For now, around 300 residential units owned by the Institute, both on and off campus, are designated for students and postdocs. Woefully short of what is needed.

The new Gary and Pennie Abramson Family International Residence—adjacent to the front gate of Weizmann—was designed

from the outset to accommodate students and postdocs. In addition, the Institute owns fully furnished units in apartment buildings off campus, which are offered as subsidized housing for singles, couples, and families.

Plans are also underway for the construction of additional residential complexes. On the southern end of campus, a cluster of 1950s-era buildings are being replaced by five new structures, which together will comprise the International Residential Campus.

“Coming from so far away, we were super afraid—we had no idea what we’d find. But we felt like **Weizmann was embracing us,**” shares postdoctoral fellow Dr. Andres Nejamkin.

Slated for completion in 2028, it will include 110 apartments for individuals, couples, and young families. Another multi-building housing project in development, located on the northwest side of campus is expected to include around 800 units for students. However, construction on this complex is only scheduled to begin in the next two years.

Until these residences are built and available for occupancy, the Weizmann Institute is working to support students and postdocs as much as possible with housing and living costs, including plans to launch a fund that would provide monthly housing stipends for those living off campus, to help offset the excessive cost of rent.

| A life in motion

The benefits of convenient and affordable housing apply not only to the Institute’s international constituents, but to Israeli students as well, most of whom embark on their academic life later than their counterparts abroad due to mandatory military service. Often, they begin graduate studies in their late 20s, just as many are starting to build a family. The on-campus daycare centers and after-school programs, alongside the green space and neighborhood playgrounds, and the ability to build a community with other researchers at similar stages in life, are all a draw for young families—but there just isn’t enough supply of suitable housing units.

Miriam Shulman, an Israeli PhD candidate studying Alzheimer’s disease in Prof. Orly Reiner’s group in the Department of Molecular Genetics, lives with her family in a rented apartment about a 30-minute walk from campus.

When she initially applied for Weizmann housing, Israel was in the midst of its second direct conflict with the Iranian regime, and much of the country was under missile attacks multiple times a day. She, her husband, Ittai, and their young son moved temporarily to Kibbutz Yad Mordechai in the western Negev. She was also eight months pregnant, and Ittai had been called up for reserve duty. Throughout this period, she says, the Housing Office at Weizmann made a real effort to accommodate them.

Despite all their best efforts, the office could only offer two possibilities: one unit was on campus, but without a safe room or bomb shelter in the building, meaning they would have to run to a neighborhood shelter. At the time, being pregnant with her second child and running to

When PhD student Miriam Shulman applied for Weizmann housing, Israel was in the midst of its second direct conflict with Iran, she was eight months pregnant, and her husband had been called up for reserve duty.



MIRIAM'S RESEARCH:
**PROBING THE MECHANISMS OF
ALZHEIMER'S DISEASE**

Miriam Shulman completed her MSc in endocrinology at the Hebrew University of Jerusalem's Faculty of Agriculture, then spent a few years in the startup sector before she realized her heart was in research. Despite not having a formal background in neurology, the brain always fascinated her, so she reached out to Prof. Orly Reiner in the Department of Molecular Genetics, who agreed to supervise her PhD work.

Miriam is now studying the connection between mutations in cells' mitochondria and the onset of Alzheimer's disease, a devastating, progressive form of neurological decline that accounts for an estimated 70% of the world's 57 million dementia cases.

She is dedicated to the applicative aspect of her work, trying to understand the mechanisms of the disease, and even finding solutions that will alleviate the suffering of Alzheimer's patients. While she loves research, and shares that this is one of the things that brought her to Weizmann, she isn't sure whether her future lies in academia or industry, or a combination of the two.

an outside shelter with a toddler was too much of a challenge. The second unit she was offered by the Institute was on the top floor of a building that had a shelter in the basement, but the stairs were difficult to manage, especially when needing to get down quickly in the middle of the night.

Miriam explains that her research project requires her to spend several intense, 14-hour days on campus every couple of months. On those days, she relies on extended family for childcare. During the weeks of armed conflict, the drive on open roads carried additional risk. With

the support of Prof. Reiner, whom Miriam describes as "extremely understanding," she was able to work remotely, focusing on image analysis of data.

When her maternity leave ends, Miriam plans to apply for Weizmann housing again, which would also make things easier for her husband, who works in Tel Aviv and would be able to commute by train.

| Attracting the best

In an increasingly competitive global landscape, and because Weizmann does not offer bachelor's degrees—and therefore has no internal pipeline of students progressing to graduate study—the School of Science is working to ensure it remains at the forefront of research and attracts the top talent from Israel and from around the

world. The support that these young researchers receive at the Institute is at the core of this mission.

"The process of becoming a scientist is a transformative experience," says Prof. Schuldiner. "It's a metamorphosis of sorts, and it's a very difficult process. Therefore, we see it as our role not just to foster scientific excellence, but to create the conditions that allow students and postdoctoral fellows to devote themselves fully to discovery while building fulfilling lives beyond the laboratory."

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A very purposeful path

Dr. Ruth Oratz and Dr. Albert Knapp found in the Weizmann Institute of Science a philanthropic home that could carry forward the legacy they wish to leave behind

SPOTLIGHT
ON

By Tamar Morad

An oncologist and medical school professor, Dr. Ruth Oratz spends most of her time treating breast cancer patients and training medical students, and she conducts clinical research on cancer treatments. But it was her ordinary research skills that brought her to the gates of the Weizmann Institute of Science.

Ruth is a clinician at New York University Langone Health, and Clinical Professor of Medicine at NYU's Grossman School of Medicine (GSOM). She has also chaired the school ethics committee and has served in numerous academic and administrative roles. She and her husband, Dr. Albert Knapp, also a Clinical Professor of Medicine at NYU GSOM, and a gastroenterologist and internist, have multiple degrees from some of the most esteemed American institutions, including Harvard and Columbia. But several years before the Hamas attacks

"My father, as a scientist, was very excited by the fact that the Zionist movement and the creation of Israel was **paved through science**," Dr. Ruth Oratz shares.

of October 7, 2023, they were already feeling uncertain about their ongoing giving to their alma maters. They began to sense burgeoning antisemitism on those campuses, the growth of the Boycott, Divestment and Sanctions (BDS) movement, and increasing anti-Israel sentiment.

"I just felt that the administrations were putting up with a lot of really negative messaging about Jews and Israel. So, we took pause about where to devote our attention, and future philanthropy," says Ruth. "Albert and I don't have children, and we really needed to think about our testamentary giving. I wanted to find an institution that truly embodied what we believe in, that we trust, and which could carry forward the legacy we wish to leave to the world."

By 2022, Ruth and Albert had found their destination: the Weizmann Institute would be a beneficiary in their will, through the American Committee for the Weizmann Institute of Science. Today, they are increasingly active in the Institute: Ruth is now a member of Weizmann's International Board, serves on the Board of the American Committee, and the couple were recently inducted into the prestigious President's Circle of the Institute's most generous donors.

"It is a great honor to have friends like Ruth and Albert, who are such accomplished physicians and know medicine and biomedical research inside and out—and who took the initiative and chose to befriend and give generously to the Weizmann Institute," says Weizmann President Prof. Alon Chen.

Science and education in the family

"Like a kibbutz on Long Island" is the way Ruth describes her unusual American upbringing. Her parents and maternal aunt and uncle had bought houses next to each other, so Ruth grew up with her own sister, and her cousins, aunts and uncles, and also her grandfather. The tight-knit extended tribe gave her a sense of the value of family and community before she took her first steps. Israel was a theme of their lives, and her grandfather often told stories about his time spent in British Mandate Palestine as a soldier in the British Army during WWI. Her father served in the US Navy during WWII.

As the years passed, science and education were the through-lines of her youth. Her mother was a lifelong educator—a schoolteacher and principal, and ultimately an assistant chancellor of the New York City Board of Education. Rosalyn Oratz

Below: Drs. Ruth Oratz and Albert Knapp. Opposite page: the Koffler Accelerator on the Weizmann campus, as captured by Ruth.

ran a citywide reading program that raised the literacy levels across the city. “My mother would say, ‘If you teach a child to read, you will unlock the Universe for them.’”

Murray Oratz, now almost 99, is a biochemist who worked on protein synthesis, in particular the role of messenger RNA (mRNA) and transfer RNA (tRNA) in the synthesis of albumin. The height of his career coincided with the early days of the study of RNA. The discovery of DNA in 1953 had opened up the question of how information encoded in DNA gets translated into proteins, spurring research into RNA molecules that might act as intermediaries.

“As a professor, my father also taught, so between him and my mother there was an atmosphere in the house of education, free thinking, asking questions, and trying to understand how things work and why things are the way they are. It was also a real balance between the sciences and the humanities,” recalls Ruth. “We used to have formal dinner parties with scientists and colleagues from my father’s network, and my mother’s friends who were in teaching and the arts. And we were always reading.”

Ruth and her sister traveled extensively with their parents, accompanying them on many work trips, not only vacations. Motivated by the Six-Day War, the family went

to Israel in 1968, when Ruth was 12. “It was a wondrous trip,” she remembers. Her father decided a visit to the Weizmann Institute was an important stop. On campus, they visited the Weizmann House and were moved by the story of Dr. Chaim Weizmann, whose work as a chemist assisted the British Army in WWI and led to the Balfour Declaration.

“My father, as a scientist, was very excited by the fact that the Zionist movement and the creation of Israel was paved through science,” she adds.

Careers in science and medicine

At age six, Ruth already knew with certainty that she wanted to be a doctor. Having spent ample time in the lab with her father, she developed deep respect for scientific research, but one thing attracted her more.

“I thought the doctor’s office was the coolest thing in the world,” she says. “I loved that big leather examination table and the paper pulled over it. I loved that the pediatricians examined me and vaccinated me. I loved how they talked to me and asked me questions and listened carefully to my answers. It was simply fascinating. To me, medicine was also the perfect combination of science and care for the human being.”

As an undergraduate at Radcliffe College in Massachusetts, she read Dante in her literature class, and at the same time her math professor also referenced the famous Italian poet and philosopher in his class. Ruth figured the coincidence “was divine providence”—a sign that she should feed her curiosity for the context in which medicine emerged and exists. She majored in the history and philosophy of science.

“I wanted to try to understand how people thought about health and sickness,” she says. “What does it mean to be healthy or ill on an individual level, a community level, or societal level? When you learn that in the Middle Ages, plagues wiped out a third of the population of Europe, you question how does a society respond and prevent it from happening again?” Rather than focusing on public health or global health, these questions led her to consider how physicians might intervene on an individual level, to help patients.

Next, she ventured off on a year-long fellowship in France before attending Albert Einstein College of Medicine in New York City. At Einstein, in addition to the essential coursework, she was drawn to scholarship in medical ethics. At that time—the 1980s—a key ethical quandary in medicine was how to handle end-of-life care and the definitions of brain death versus cardiac death. The advent of technologies like ventilators and new life-sustaining drugs were driving these discussions.

“We explored questions like, ‘When do we intervene?’ and ‘When do we stop?’ Physicians, philosophers, and social scientists were weighing in on these kinds of questions and they really interested me,” she recalls.

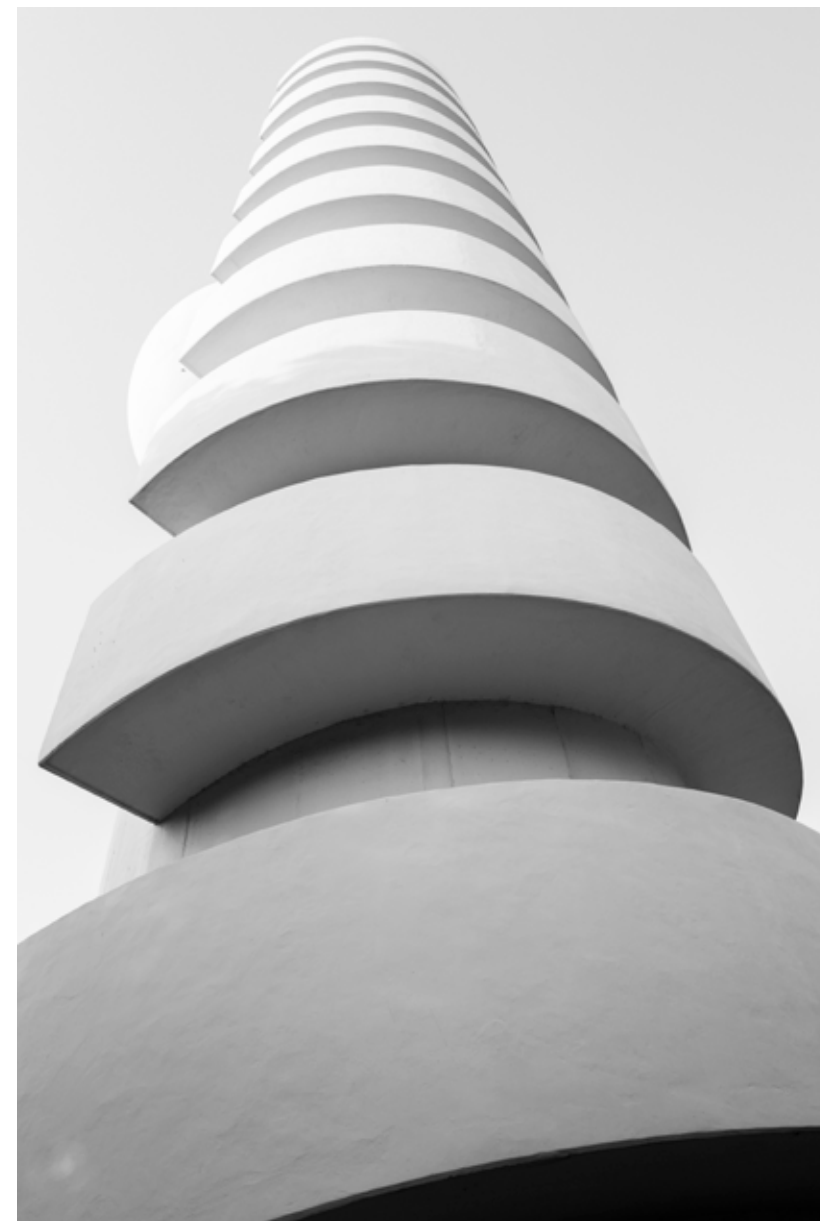
On a clinical rotation in internal medicine, she and Albert met. He was doing his residency. They hit it off, becoming good friends. But their lives took different turns and

they married different people. Ruth did her internship and residency at Bellevue Hospital in Manhattan and began her career in oncology at NYU. Albert—who had received his medical degree from Columbia University before his residency—set off for a fellowship at Harvard’s Brigham and Women’s Hospital in Boston. Eventually, both pursued careers in medicine in New York, but didn’t cross paths again for 15 years.

“Weizmann has a clean, pure model. You can trust that Weizmann is hiring the **best people in the field**, with no other considerations other than the outstanding nature of their research,” Ruth says.

Throughout that time, Ruth passed Albert’s private office on her regular jogs to Central Park and noted the shingle indicating his medical practice—but never knocked on the door. When they were both divorced and single, a mutual friend reintroduced them. “It was as if not a day had passed since we’d last seen each other in medical school,” Ruth says. They were married soon after.

When they are not working long days, the duo travels extensively together and are both amateur photographers with impressive collections. Their interests are diverse: Ruth is also one of the founders of the *Bellevue Literary Review*, an independent literary journal at the intersection of the arts and science, inspired by the traditions of Bellevue Hospital and NYU, that brings together the perspectives of patients, caregivers, and others in the hospital’s community. Albert is a devotee and expert in history, particularly military history and



SPOTLIGHT
ON

political science, and is a member of the Council on Foreign Relations.

Weizmann connection

Thirty years after her first trip to Israel in the late 1960s, Ruth came on her second trip in 2000. Following the discoveries of the BRCA1 and BRCA2 tumor suppressor genes in breast cancer, she helped lead clinical trials for patients carrying mutations in these genes, which can greatly increase risk of breast cancer. Aware of the high incidence in Israel, and among Ashkenazi women in particular, Ruth attended a conference on the Weizmann

campus on the topic, and among other meetings, met with oncology colleagues at Hadassah Hospital in Jerusalem.

In the last decade, as they began to think seriously about their philanthropic legacy and were at the same time becoming increasingly disillusioned by the intellectual atmosphere in the academic institutions they had attended, Ruth spent time reading and researching—a task that took her on a spree of comparison and contemplation. Her personal experiences at Weizmann and her growing body of knowledge of the institution continued to draw her in.



"I told Albert: Weizmann is perfect for us. Here's an independent scientific institution that is doing the best science in the world. The research is amazing. And not just in the biomedical sciences—which is what we tend to care about most—but also in astrophysics, mathematics, chemistry, and environmental sciences. Across the board, the level of excellence was astonishing."

There was another appeal. Weizmann's hiring model—based on excellence, not filling quotas and positions being vacated—felt like an epiphany amidst the focus on diversity, equity, and inclusion (DEI) popular at many of the institutions she was familiar with. "Weizmann has a clean, pure model. You can trust that Weizmann is hiring the best people in the field, with no other considerations other than the outstanding nature of their research."

She also reminisced about her previous visits to campus, and how her father was moved by the Chaim Weizmann story. "But that was just the starting point," she says. "The more I learned about Weizmann, the more I realized how special it is. The model of the scientists living on campus and fertilizing each other's imaginations. The total academic freedom, the productivity going in a positive direction, free of politically

"It is a great honor to have friends like Ruth and Albert who are such accomplished physicians and know medicine and biomedical research inside and out—and who took the initiative and chose to befriend and give generously to the Weizmann Institute," says President Prof. Alon Chen.

motivated agendas, tangibly benefiting humanity and the planet. And—on top of all that—it is in Israel. I looked at other places in the US, and in Israel, and I kept coming back to Weizmann until I realized there was no reason to look any further." She reached out to the American Committee.

Then, October 7 happened. In its wake, anti-Israel student protests erupted on the very campuses Ruth and Albert had graduated from, validating all their concerns in the previous few years.

Advocacy in the medical world

In the immediate aftermath, she recalls, "my NYU colleagues and I were at a tremendous loss as

to what to do. We started texting each other, discussing how we can help Israel." They reached out to the medical school dean and board chair, encouraging them to express a strong commitment to Israel and a willingness to help.

"At that point, it was about helping Israel—we didn't think about the need to support our Jewish community within the school. Within a week, we had 800 physicians eager to support Israel and donating funds for Israel, including for an ambulance and supplies."

But even before Israel's incursion into Gaza began, the anti-Israel protests began and after the incursion, "the narrative quickly changed. All that we were hearing was that Israel was killing innocent Palestinians—and the idea that a sovereign country has a right to defend itself just evaporated into thin air. And then it morphed pretty quickly into the genocide message, and the outbursts on campuses and social media were horrific—like nothing we could have imagined."

The organized nature of the protests, their foothold in academia, the fact that the epicenter was at Columbia University in New York and Harvard University in Cambridge, and the anti-Israel statements published by several medical journals provided more and more fuel to the fire.

Ruth and a small group of colleagues saw a burgeoning need for mutual support among Jews in the healthcare professions, including medical students, in the face of rising antisemitism and anti-Israel sentiment. Together, they established the American Jewish Medical Association. Within two years, it grew to include nearly 2,000 members across the US.

In its first year, the Association was primarily focused on pushing back against misinformation, discrimination, and hate speech. Eventually, it grew into an informal network of colleagues who serve

as sounding boards and mentors, a platform for educational seminars and a launching pad for interactions with Israeli medical colleagues. Those have resulted in collaborations with physicians at Israeli hospitals, including one on prosthetics for amputees and trauma medicine. The Association is funding a major study by the renowned Brandeis University scholar of contemporary Jewish studies and social policy, Prof. Leonard Saxe, on antisemitism in American medicine.

Since October 7, Ruth's and Albert's commitment to Weizmann, "as an Israeli institution that strengthens Israel and the world at the same time," she says, has only deepened.

In 2024, she traveled to the Atacama Desert in Chile with a small Weizmann delegation of astrophysicists and management to visit the Giant Magellan Telescope, an international collaboration in which Weizmann is a leading partner. While her interest is mainly in the life sciences, the trip solidified her

appreciation for Weizmann's broad reach across the sciences.

In 2025, Ruth joined the Institute's International Board. On campus for the 77th Annual General Meeting in 2025, she met with the first cohort of students in the Miriam and Aaron Gutwirth Medical School. She was deeply impressed because, she points out, while most MD-PhD programs separate MD and PhD studies chronologically, the Weizmann program fully integrates the study of medicine and the pursuit of basic research throughout the entire seven-year training period.

Furthermore, the cohort is small—the first year had 18 students and will ramp up to 40—enabling interaction and collaboration. "I saw how the students, when studying any clinical subject, are expected to be simultaneously asking a research question," she says. "This program will graduate doctors who are always thinking about what needs to be explored more deeply in research, and it will graduate scientists who are always keeping patient treatment in mind."

ALIGNED IN IMPACT

Driven by a shared conviction that excellence in science holds the key to solving the world's most pressing needs in health and medicine, Dr. Ruth Oratz and Dr. Albert B. Knapp have made a transformative testamentary pledge to the President's Discretionary Fund at the Weizmann Institute of Science. Directed toward *Empower Tomorrow: The Weizmann Institute's Campaign for the Future of Humanity*—a global effort to support the people and the science that drive extraordinary breakthroughs—this gift reflects their deep commitment to the Institute's mission.

The decision to partner with the Weizmann Institute came after a thorough search to identify an organization that most reflected their values and vision. Choosing to direct their philanthropy to the President's Discretionary Fund and the *Empower Tomorrow* campaign signifies their confidence in Weizmann leadership to earmark resources where they are needed most: responding swiftly to urgent needs and emerging opportunities and backing the ideas that spur innovation and define the Institute's spirit.

"Ruth and Albert's visionary gift and their decision to allocate it to unforeseen needs and new priorities represents a special trust in the Institute, and a large investment in Israeli science," says Prof. Alon Chen, President of the Weizmann Institute. "Many of the discoveries and the new knowledge that emerges from Weizmann will be thanks to their generosity, and I am sure that untold numbers of people will benefit."

Drs. Oratz and Knapp also serve on the Campaign Cabinet for *Empower Tomorrow*, exemplifying their commitment to the Institute and the future of science.

SPOTLIGHT
ON

Dr. Ruth Oratz
with Weizmann
President
Prof. Alon Chen.

Opposite page:
photo taken by
Ruth of a walkway
at the Clore
Garden of
Science.



Building the bridge between **discovery** and **impact**

Dr. Sharon Fireman leads Bina, the translational science unit of the Weizmann Institute. In this conversation, she shares what Bina does, what it has achieved, and where she sees it heading

By Jennifer Racz

Give us the elevator pitch for Bina. What is its value?

Bina—meaning “wisdom” in Hebrew, and an acronym for Bridge. Innovate. Nurture. Advance—is the translational research and innovation unit of the Weizmann Institute of Science, established in 2021 to address the gap between basic science and real-world applications.

At its core, Bina takes a holistic approach to scientific translation. We engage with scientists at the earliest stages—often before ideas are fully matured—to help define potential applications, build proof-of-concept pathways, and systematically de-risk projects. In parallel, we have built an ecosystem that includes an industry mentorship network, innovation fellowships for PhD students, entrepreneurship programs for women scientists, and targeted workshops for staff scientists.

It's important to point out that Bina is not a standalone incubator. It is embedded within the academic research environment, making translation a natural extension of the scientific process.

What results or gains have you seen?

In five years, over 165 projects were submitted for evaluation, 82 were selected for funding and hands-on development, and 20 matured and were sent over to Yeda Research and Development (the Institute's tech-transfer arm) for commercialization. To our delight, 11 projects have already resulted in commercial transactions or external collaborations.

These outcomes reflect the increasing quality and maturity of projects advancing through the Bina pipeline. In 2025 alone, five projects reached proof of concept. Among them are a brain-computer interface for post-traumatic stress disorder that spun into a new company; a genetic medicine platform licensed to Vyriad, a biotech company based in the US; and a lymphedema drainage device that completed a first-in-human study and launched the medtech startup Sub-Q Bionics.

Beyond these, perhaps the most significant success has been the breadth of participation across the Institute. More than 115 principal investigators have submitted applications to Bina's Nurture Program, including researchers who would not traditionally engage

with technology transfer. In addition, 14 projects were initiated or led by PhD students or staff scientists who have gone through Bina programs themselves, demonstrating our success in creating a cultural shift where translational thinking becomes part of the scientific mindset.

What are some of the challenges you have encountered, and how did you overcome them?

Building something entirely new is always challenging, particularly within a leading research institution like Weizmann. One of the main challenges we faced was introducing a translational mindset into an environment deeply rooted in curiosity-driven science. Unlike traditional research programs or established technology transfer mechanisms, there was no existing model to follow—we had to define our vision, shape the mission, and build the model from the ground up.

From the beginning, our approach was guided by deep respect for the Institute's mission: advancing fundamental knowledge for the benefit of humanity. Bina was designed as an additional layer within the academic landscape, positioned between discovery and application. Given the inherent uncertainty of building a new model, we adopted a lean, stepwise strategy, starting modestly, learning by doing, and continuously refining the model. We worked alongside researchers in their own scientific language and built networks of professional experts and

external collaborations to support a wide range of scientific fields, while also fostering a translational research community through dedicated training programs.

How do you think Bina is impacting the next generation of scientists at Weizmann?

Scientific training at institutions like Weizmann is grounded in excellence in fundamental research, preparing graduate students and postdoctoral fellows to pursue independent, curiosity-driven inquiry. At the same time, the scientific and innovation landscape is evolving, and with it, the career paths and ambitions of a new generation of researchers, who increasingly seek to move beyond generating knowledge and translate their discoveries into real-world solutions.

Bina identified this shift and developed programs that expose young scientists to the process through which discoveries evolve into applications. But looking ahead, we believe exposure alone is no longer enough—we need to move toward execution.

As part of Bina's long-term vision, we are exploring the development of a dedicated pathway for scientific entrepreneurs, a select group of PhD graduates with strong scientific foundations and the drive to advance the technologies. Positioned at the pre-commercialization stage, this program would combine entrepreneurship training with hands-on venture creation. Participants will develop their technologies toward proof of concept, forming the basis for follow-on funding.

We see this as the beginning of a growing engine for venture creation—one capable of continuously generating new companies and scientific founders rooted in Weizmann Institute research.



“From the beginning, our approach was guided by deep respect for the Institute's mission: advancing fundamental knowledge for the benefit of humanity.”

With the support of forward-looking philanthropic partnerships, we have the potential to unlock the next wave of scientific translation.

What is your vision for Bina? Where do you see it in 10 years?

Looking ahead, our vision is to position Bina as a fully embedded innovation engine within the Weizmann Institute. Having completed our establishment phase, where we developed and validated our model, we are now entering an exciting new scale-up phase: Bina 2.0.

Over the next decade, we see Bina becoming a sustainable infrastructure that consistently produces

high-quality, application-ready opportunities for Yeda's pipeline; strengthens collaboration across academia and industry; and equips the next generation of scientific founders with leadership and venture-building skills.

Ultimately, we believe Bina can help position Israeli science at the forefront of global innovation, advancing both knowledge and meaningful human impact.

BINA IS SUPPORTED BY:

- The Peter Dubens Family Foundation
- Roberto and Renata Ruhman

Gems in the making

The Davidson Institute of Science Education is bringing talented students from Israel's periphery closer to scientific discovery

By Shira Nevo

What does it take for a young person to imagine a future in science? For many students outside of Israel's center, where access to quality science education can be limited, academic opportunities can feel out of reach, despite their curiosity, motivation, and talent. With innovation playing a vital role in Israel's future, shaping fields from medicine and agriculture to cybersecurity and energy, bringing students from the country's geographic periphery closer to science education and exploration is essential.

Recognizing this need, the Davidson Institute of Science Education, the science literacy arm of the Weizmann Institute, is working with students to build bridges between talent and opportunity. Through Science Gems, outstanding high schoolers from peripheral regions discover that where they come from does not define what they can achieve.

"The Science Gems program for students from Israel's social and geographic periphery was founded on the belief that talent and curiosity exist everywhere," says Ruth Shoham, Chief Executive Officer of the Davidson Institute. "Exposure to advanced scientific learning, along with personal mentorship and a sense of belonging, can transform many students' lives. During this challenging period of uncertainty, we believe it is important to provide them not only with knowledge and tools, but also with the confidence to dream big and realize their potential."

The program identifies highly motivated students through a rigorous selection process and grants them access to advanced matriculation tracks in fields at the forefront of modern science, including computational astrophysics, neuroscience, earth science, and

BioCode—disciplines unavailable within the standard high school curriculum. Coursework aside, the participating students are offered something equally important: an early acquaintance with the world of professional science.

They are introduced to scientific knowledge, as well as the way scientists think— learning how to ask questions, explore uncertainty, and approach problems with curiosity and confidence.

For many, this is where something begins to change. "What set this program apart was the way it nurtured curiosity," says one former participant, who is now a mechanical and biological engineering student at the Massachusetts Institute of Technology. "Just as importantly, it gave us the tools to handle that curiosity—through independent learning, critical thinking, and the freedom to explore."

Learning without boundaries

Science Gems uses a hybrid format that allows students nationwide to participate without requiring schools to open dedicated classes or restructure schedules.

The journey begins in the summer, when students arrive on the Davidson campus for an intensive seminar. For many of them, the program offers a first glimpse of what it means to belong to a scientific community and to work within an active research setting.

Throughout the year, students engage in weekly online sessions and independent assignments, and embark on a journey that teaches them to think and work like researchers—including asking questions, drawing conclusions, and dealing with setbacks and failures along the way. They return to campus several times a year for immersive seminars, collaborating closely with mentors and instructors from diverse scientific backgrounds.

"As a high schooler, I hadn't really found a place where I felt engaged until this program," another

participant recalls. "It gave me access to everything I had dreamed of and deepened my passion for science."

A third student, now studying neuroscience at Bar-Ilan University, remembers "counting down the days" until meetings at the Davidson Institute. "Studying there made it clear to me that I had found my great passion," she says.

"As a high schooler, I hadn't really found a place where I felt engaged until this program. It gave me access to everything I had dreamed of and **deepened my passion for science,**" says a former Gems participant.

Pathways for personal growth

Central to the Science Gems program is the research experience. Each participant is mentored through an independent project, developing a strong base of scientific knowledge, along with the skills that define scientific thinking: critical analysis, collaboration, creativity, and communication through real engagement with data, experimentation, and discovery.

Over time, students who may have once seen science as distant or inaccessible begin to recognize their place, not simply as learners, but as tomorrow's scientists and innovators. For many, the program creates pathways for personal growth and opportunities that once seemed unattainable.

Moreover, in a period marked by disruption and uncertainty throughout Israel, Science Gems offers not only a high-quality educational experience but also a feeling of continuity and purpose in chaotic times.

The program's structure, the connection forged with the mentors, and the opportunity to engage deeply with learning, all contribute to an atmosphere of stability, allowing curiosity—and with it, a forward-looking sense of possibility—to thrive.

For many students, the impact of Science Gems can be felt long after they complete the program. Most of them pursue advanced studies in engineering, computer science, mathematics, medicine, and the exact sciences. Over half of the participants are young women, demonstrating a growing interest in STEM studies among girls and the value of the program in meeting this interest.

Partnering with municipalities and schools across Israel, the Davidson Institute is working to expand enrollment and reach even more students nationwide. For young people who once struggled to imagine themselves in the world of research and discovery, that future no longer feels distant—it has already begun.

SCIENCE
EDUCATION



DOES LIGHT MATTER?

A new exhibition at the Clore Garden of Science allows visitors to explore how light reshapes the way we see and question the world

By Shira Nevo

Most of us rarely think about light itself. We notice what it reveals, not how it bends, reflects, distorts, or transforms the world around us. Now, a new exhibition at the Clore Garden of Science—titled *Does Light Matter?*—invites visitors to slow down and notice those hidden moments again.

Produced by Weizmann’s Davidson Institute of Science Education, the installation uncovers interactions between light and matter, between reflection and refraction, through hands-on displays, artistic environments, and open-ended inquiry.

Inside, visitors explore the many ways light interacts with matter. The Garden’s ‘Shadow Laboratory’ and a variety of immersive exhibits invite experimentation with color, reflection, transparency, and refraction. Outdoors, familiar phenomena, such as the apparent bending of a spoon in water, and large-scale anamorphic installations, inspire visitors to investigate how light, materials, and perspective shape the way we perceive our world.

Does Light Matter? encourages participants to ask questions and experience science as a process of curiosity and revelation. Can transparent materials cast shadows? Why do reflections alter what we see? What happens when light bends?

Designed for all ages, it creates moments of shared discovery that at once feel playful, artistic, and deeply scientific. Long after leaving, visitors may find themselves noticing reflections in windows, shadows across curtains, or changing colors throughout the day—not because they were taught to look, but because, for a moment, they paused long enough to see.

THE CLORE GARDEN OF SCIENCE IS SUPPORTED BY:

- The Blustone Charitable Trust in memory of Lily & David Blustone
- The Clore - Israel Foundation
- The Howard, Lisa, and Nanci Garoon & Families’ Fund

ANNOUNCEMENTS

Commitment to restoration and research

A new grant from the Leona M. and Harry B. Helmsley Charitable Trust will help rebuild critical campus infrastructure

The Leona M. and Harry B. Helmsley Charitable Trust has made a landmark grant toward the Weizmann Institute’s Emergency and Recovery Fund, with a focus on restoring the Wolfson Building for Biological Research—one of the hardest-hit facilities in the June 2025 Iranian missile attack.

Sandy Frankel, a Trustee of the Helmsley Charitable Trust, recalls his immediate reaction to the event. “I was horrified. Given the targeted missile strikes to key research buildings, it was clear that Iran’s intention was to eliminate one of Israel’s greatest assets and strengths—its scientific prowess, its brainpower.

“The need to help Weizmann’s scientists return to their laboratories as soon as possible was obvious,” he adds. “There was no time to waste. Valuable research results were already destroyed or at imminent risk of destruction. Within days of the

attack, we reached out to see how we could help.”

Their response reflects a longstanding commitment to both Israel and the Institute. Frankel, who has overseen the Helmsley Trust’s Israel and Crohn’s Disease programs for nearly two decades, explains: “Our Israel Program helps support the country’s role as a leader in basic scientific research, and our Crohn’s Disease Program aims to find a cure to this debilitating disease. Given Weizmann’s global reputation for scientific and medical breakthroughs, support for Weizmann was a no-brainer for both programs.”

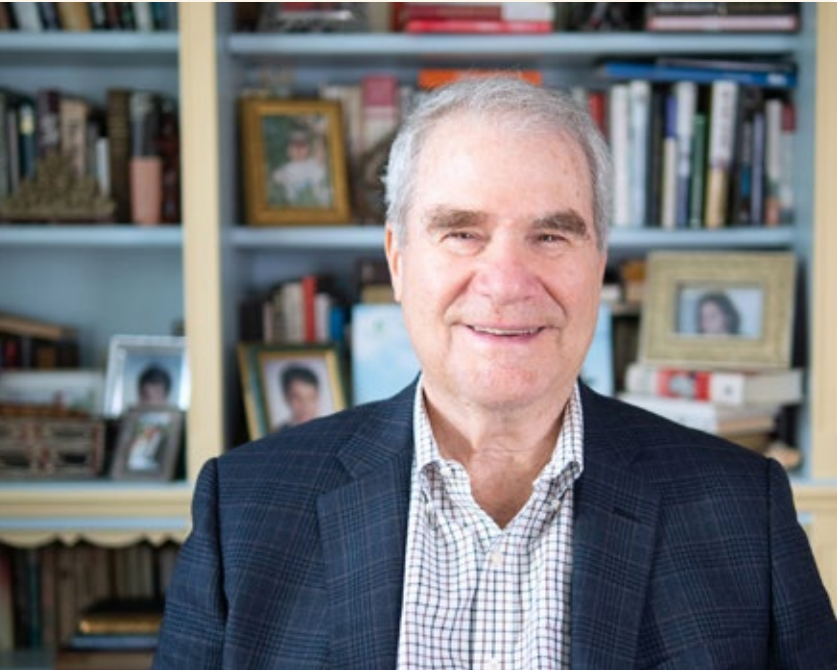
That partnership also extends to strengthening the Institute’s campus life and community. The Trust recently established the Helmsley Community Center, a modern facility that will consolidate early childcare programs on campus while fostering

meaningful connections among faculty, students, and employees.

Their latest grant toward the Institute’s recovery efforts will play a central role in reconstructing the Wolfson Building, where 17 laboratories were destroyed, including that of a Weizmann scientist studying Crohn’s.

“This is about more than rebuilding laboratories—it’s about ensuring that the work taking place within them can continue—work that has an outsize impact on science, medicine, and the future,” says Weizmann Institute President Prof. Alon Chen.

“Supporting Weizmann and its researchers is essential to the advancement of knowledge across scientific fields that will benefit not just Israel, but all of mankind,” Frankel adds. “Mankind cannot afford to lose the Weizmann Institute.”





A new chapter in medical education

A milestone gift from Milvia Perinot and Fondazione Henry Kreter will support the new MD-PhD program

Milvia Perinot and Fondazione Henry Kreter have made a significant gift to the Weizmann Institute to establish the Henry Kreter and Milvia Perinot Fund for MD-PhD Studies; Shaping the Future Leaders in Medicine and Research. This generous support will be directed toward training Israel's next generation of outstanding physician-scientists—students enrolled in Weizmann's MD-PhD Program in honor of Miriam and Aaron Gutwirth—equipping them with the scientific knowledge needed to advance healthcare both locally and globally.

Launched in October 2025 with an inaugural class of 18 exceptional

students, the MD-PhD program is expected to grow to cohorts of up to 40 students annually. Graduates will be prepared to address complex medical challenges, translate laboratory discoveries into clinical practice, and improve patient care. The program offers a highly integrated academic and clinical training experience, with a flexible structure that allows students to tailor their studies to their interests.

This new gift builds on nearly two decades of partnership between the Weizmann Institute, Fondazione Henry Kreter, and Ms. Perinot—a close collaboration that has promoted women in science, accelerated breakthroughs in physics, and catalyzed powerful innovations in life sciences. With the establishment of the Henry Kreter and Milvia Perinot Fund for MD-PhD Studies, a bold and inspiring new chapter begins.

"Milvia's gift to the medical school will not only help the Institute and change the national landscape in Israel by fostering a new generation of physician-scientists—it will also

enable worldwide impact because the graduates will go on to do biomedical research that will affect human health everywhere," says Weizmann President Prof. Alon Chen.

"In addition, their approach to asking scientific questions with a clinical outlook will empower them to become leaders here in Israel and become part of a global network of the brightest minds in biomedicine, whether they choose to focus on patient care or scientific research, or both," he adds.

"For me, the Weizmann Institute of Science is far more than a place where advanced, world-class basic research is conducted. For me, the Institute is a home!" says Milvia. "A home that enables women and men filled with curiosity and human passion to explore the mysteries of life and the universe. It is a place that upholds freedom of thought and freedom of research, while fostering meaningful interaction among all scientific disciplines. I am proud to take part in promoting, developing, and strengthening the Institute, for the benefit of all humanity."

An enduring legacy

Anat and the late Dr. Shmuel Harlap made a meaningful commitment to support Weizmann recovery and research

Dr. Shmuel Harlap passed away after this article was originally prepared for publication. His partnership with Anat in supporting science, healthcare, and Israeli society leaves a lasting legacy.

Israeli philanthropists Anat and the late Dr. Shmuel Harlap responded swiftly to the June 2025 missile attack on the Weizmann Institute campus, and within weeks they joined the Institute's restoration efforts with a gift to the Emergency and Recovery Fund, reflecting a deep commitment to science, academia, and the future of Israel. As first-time donors to Weizmann, the Harlaps' decision to step forward at that moment was especially meaningful.

"When we saw the extent of the damage, it was clear that we needed to act. The Institute's work is too important to pause," the Harlaps said at the time. Their gift made possible the immediate repair and rebuilding of laboratories and infrastructure, the replacement of essential scientific equipment, and the fast return of scientists and students to their vital work—helping to ensure the continuity of research while contributing to the stability of the campus community at a critical time.

"Science and education are central to Israel's future. Supporting the Institute at this pivotal moment felt both necessary and natural," Anat Harlap added. In the months that followed, the Harlaps expanded their support through an additional gift to the President's Discretionary Fund, providing flexible funding to be directed where it is most urgent and will have the greatest impact.

"We are deeply grateful for this significant support," Weizmann Institute President Prof. Alon Chen said. "It allows us to respond where the need is most acute, with both speed and care, and reflects a level of trust that is essential as we

rebuild and ensure that science keeps moving forward despite the challenging reality."

Throughout their years of philanthropy, Anat and the late Dr. Shmuel Harlap made an extraordinary contribution to Israeli society. Together, they made the largest-ever donation to Israel's healthcare system and supported communities in the Gaza envelope region in the aftermath of October 7.

Dr. Harlap's passing marks the loss of a deeply committed philanthropist, whose generosity and belief in Israel's future will continue to have an impact for years to come.



ANNOUNCE-
MENTS

A personal connection to recovery

Prof. Ruth Arnon has made a tremendous contribution to support the Institute's restoration following the 2025 Iranian attack

For Prof. Ruth Arnon, the ballistic missile strike on the Weizmann campus in June 2025 hit especially close to home. Over decades as a scientist and leader at the Institute, she spent some of the most formative years of her career in the Ullmann Building of Life Sciences and later in the Wolfson Building for Biological Research, where she headed her lab for more than 50 years.

"When the beautiful Ullmann Building suffered a direct hit by an Iranian missile, and the Wolfson Building was badly damaged, the impact was very personal for me," says Prof. Arnon. "Weizmann contributed so much to my career and success that I felt a need to give back."

A world-renowned immunologist, she is recognized for groundbreaking discoveries in multiple sclerosis and



Michael Sela and Dvora Teitelbaum."

Her gift to the Weizmann Institute's Emergency and Recovery Fund demonstrates a long-standing dedication to the Institute, as well as an enduring commitment to securing its future.

"I hope to see the repairs proceed as quickly as possible, and the buildings restored to their

former glory, updated and better than they were before," she says.

"We are truly grateful to Ruth for this meaningful and generous partnership," says Weizmann President Prof. Alon Chen. "Her support reflects a profound connection to the Institute and helps ensure that we can rebuild immediately and that our scientists can continue their work impacting lives around the world."

for co-creating the blockbuster drug Copaxone®.

Prof. Arnon and her late husband, Dr. Uriel Arnon, have generously supported diverse initiatives at the Institute over many years, including science education and establishing the Artificial Intelligence for Smart Materials Research Fund, in Memory of Dr. Uriel Arnon.

"I have spent most of my career at the Weizmann, as a scientist and in multiple roles, including Vice President," Prof. Arnon shares. "It is here that I did my research on multiple sclerosis and developed Copaxone in collaboration with

Leading the charge against infectious diseases

Major gift from the Abisch-Frenkel Foundations will advance research to understand and counter infectious threats

The Abisch-Frenkel Center for Infectious Disease and Host Interaction Research was recently established following a tremendous donation from the Abisch-Frenkel Foundation (Switzerland) and the Abisch-Frenkel Foundation (Germany). This new initiative will focus on decoding the complex mechanisms governing interactions between microbes and all forms of life, and the role of microbes in shaping human health and driving disease.

Led by Prof. Eran Elinav of the Department of Systems Immunology, the Abisch-Frenkel Center supports pioneering investigations on bacteriology, virus and phage biology (including COVID-19), parasite biology, and the microbiome. The Center provides competitively

awarded grants and shared research infrastructure and equipment, such as a smartphone-based clinical trial application, tools for microbial analysis, and proteomics technologies.

Infectious diseases have re-emerged as a significant threat to human existence. At the same time, symbiotic microbial communities—collectively termed the microbiome—are increasingly known to play critical roles in human health and disease. Through both basic and translational science, the Abisch-Frenkel Center aims to illuminate host-microbe

interactions and their impact on plants, animals, and humans, for the benefit of global wellbeing.

"The Abisch-Frenkel Foundations for the Promotion of Life Sciences, established in 1994 in Basel, Switzerland, by Drs. Leo Abisch and Eva Abisch-Frenkel (z"l), together with their affiliate in Germany, established in 2020, are pleased to announce their support for the establishment of the Center for Infectious Disease and Host Interaction Research," says Prof. Dr. Georg A. Holländer, President of the Board of the Foundations.

"The Foundations are confident that Weizmann's outstanding basic scientific research provides a robust basis for an initiative that will advance the understanding of infectious diseases and generate meaningful insights to support the global effort to understand and diminish the burden of infectious diseases and prevent future pandemics."

Weizmann President Prof. Alon Chen adds, "We are honored the Abisch-Frenkel Foundations have chosen once again to partner with us, this time to accelerate our work to promote human health worldwide."



■ Drs. Leo Abisch and Eva Abisch-Frenkel (z"l)



Paying tribute to Mandy Moross, a guiding force behind the Weizmann Institute's growth, resilience, and global standing

By Tamar Morad

Mandy Moross, a pillar of the Weizmann Institute global community, passed away on January 26, 2026, at age 94.

Over the course of four decades serving as a member of the International Board and as its chairman, Moross developed close relationships with Weizmann leadership and helped reshape corporate governance and finance, making critical decisions that would secure the long-term health of the

institution and deepen the breadth and depth of its research.

His lasting impact is also felt through his philanthropy, with his wife Edna, which was directed to labs, professorial chairs, and preserving the Chaim Weizmann legacy, and which enabled the Institute to embark on ambitious projects including a flagship center for cancer research.

Moross was driven by a deep love for Israel and the Jewish people, and he considered the Weizmann Institute the epitome of Israel's achievements. His connection with the Institute spanned seven decades, starting with his first visit to campus in 1956.

"It is impossible to overstate Mandy's contribution to the Weizmann Institute throughout the years. His guidance in financial and governance matters made us a better institution and helped us to do better research and have more impact. His and Edna's and the Moross family's leadership and generous philanthropy and friendship are unsurpassed,"

says Prof. Alon Chen, President of the Weizmann Institute of Science.

"It is hard to imagine the Weizmann Institute without Mandy. He will be sorely missed."

Building the future

Moross was elected in 1982 as a member of the Board of Governors (known today as the International Board), during the presidential term of the late Institute Professor Michael Sela. Together with Institute Professor Haim Harari, who served as President from 1988 to 2001, Moross encouraged the creation of a central endowment fund similar to that of major US universities, thus moving away from a model in which relatively small funds had been invested in multiple places. That effort came to fruition in the form of the Weizmann Global Endowment Management (W-GEM) in 2002, which is managed in New York. The endowment has transformed the Institute's ability to provide for its diverse needs via a robust and reliable annual infusion of funds.

SPOTLIGHT
ON

Leader, friend, philanthropist

“Mandy’s business acumen guided us for many years, and the creation of W-GEM was one of his major contributions,” says Prof. Harari. “His input on important matters was an extraordinary manifestation of how a fruitful collaboration between generous and experienced business leaders and the scientists managing the Institute can advance a scientific research institution. He knew what he wanted and how to achieve it, but always did so without fanfare, with minimal conflict, and with impeccable loyalty to the goals of the Institute.”

In a 2010 interview, Moross said about their friendship: “These are the things that motivate one... [Like when] you find the right teacher in school, you’d be inspired to study what he teaches.”

Moross served as Chairman of the International Board from 2005-2014, during the presidency of Institute Professor Daniel Zajfman. During those years, he made key structural changes to Institute governance, including the creation of an Executive Board. After stepping down from that role, Moross became Chair of the Assets Committee, which oversees all assets and endowments. Throughout the years, he served in multiple leadership positions in W-GEM, including as Chair of the Trust.

“Mandy possessed a profound understanding of how the Institute truly functioned,” says Prof. Zajfman. “To him, the Weizmann Institute of Science was the jewel in the crown of the State of Israel. He was unwavering in his conviction that whatever the Institute undertook must be of the highest, indeed, first-class standard; anything less, in his view, was simply not worth doing. His influence, values, and devotion will continue to shape the Institute for decades to come.”

Natural love of science

Mandy Moross was born in Johannesburg, South Africa. His grandparents had come from Lithuania, the family origin of many South African Jews. His father was a physician, and Mandy studied chemistry, zoology, and mathematics as an undergraduate at the University of the Witwatersrand, Johannesburg.

diversified mining and industrial corporations. In 1961, he became CEO of the I.W. Schlesinger companies and helped build it into South Africa’s second-largest conglomerate, eventually selling it to the Anglo-American Corp. He subsequently joined the board of its controlling shareholder, Rand Selection Trust. Eschewing apartheid, he and Edna and their four children



“It is impossible to overstate Mandy’s contribution to Weizmann throughout the years. His guidance in financial and governance matters **made us a better institution** and helped us to do better research and have more impact,” says President Prof. Alon Chen.

He enrolled in Harvard Business School at age 19 and graduated with distinction in 1953. After receiving his MBA, he moved to England where he worked as a chemist for Imperial Chemical Industries.

He met Edna and they married and moved back to South Africa, where he joined Anglovaal Group, one of the country’s largest

moved their home and business interests to the UK and the US, where Mandy continued to build and lead a series of companies in sectors spanning financial services, energy, maritime, real estate, leisure, and consumer goods.

While at Harvard, Moross met a South African scientist named Prof. Peter Hillman, who was a

member of the Department of Nuclear Physics at the Weizmann Institute. They became fast friends. When Moross came to Israel for the first time, in 1956 just after the Sinai crisis, Hillman was his guide.

Moross recalled meeting Prof. Amos de-Shalit, the renowned physicist and pioneer of science education, who made a profound impression on him. De-Shalit “was magic—an inspirer,” he said. “The Institute was quite small. But I was impressed with the brainpower that was here and [intrigued] by why people like Hillman and other foreigners came here.”

In 1963, Moross traveled to Israel and met then-Director of Military Intelligence Benjamin Gibli, who introduced him to Moshe Dayan, the IDF Chief of Staff at the time. Those became long-lasting friendships. A decade later, his friend Marcus Sieff encouraged Moross to become more involved in the Institute. Sieff was the youngest son of Israel and Rebecca Sieff, owners of the famed Marks & Spencer department store in the UK and whose gift in memory of their son Daniel established the Daniel Sieff Research Institute in 1934, the precursor to the Weizmann Institute.

“I learned much from these relationships and began to understand Israel, what it represented, its challenges and potential,” Moross said in a 2013 interview published in Weizmann Magazine. Those friendships, in addition to his connection to the Sieff family, “and the cerebral power at the Weizmann Institute and its exceptional campus was the start of my meaningful relationship with Israel and Weizmann,” he said.

Legacy of leadership

Mandy and Edna Moross’ philanthropy at the Institute was directed to three main areas: robotics,

Below: Edna and Mandy Moross with their daughter Karen Siem. Opposite page: with Weizmann President Prof. Alon Chen.



cancer, and the legacy of Dr. Chaim Weizmann, founder of the Institute and the first President of the State of Israel.

In 1981, the couple made their first gift to the Institute, establishing a professorial chair in memory of Mandy’s late father, the Dr. Hymie Moross Professorial Chair. Today it is held by Prof. Irit Dinur of the Department of Computer Science and Applied Mathematics. Its previous incumbent was Prof. *Emeritus* Tamar Flash of the same department, an expert in motor control in humans and the use of robotics.

“I will always remember and be grateful to Mandy Moross and his family,” says Prof. Flash. “Thanks to Mandy and his family, their warmth and friendship towards me, and their keen interest in our scientific research, we were able to carry out our work over the years.”

Then, in 1996, came the establishment of the Moross Laboratory for the Study of Vision Research and Robotics, run by Prof. Shimon Ullman (now *emeritus*). In 2009, they established the Moross Research School of Mathematics and Computer Sciences

within the Institute’s graduate school, the Weizmann School of Science.

The Morosses’ first gift in cancer research came in 1998, a contribution that established the M.D. Moross Institute for Cancer Research, which at that time was the biggest one-time gift in Weizmann history. It enabled cancer research to grow and expand over the next two decades, and in 2019 the Moross family made another magnanimous gift to establish the Moross Integrated Cancer Center (MICC).

“Immediately upon meeting Mandy, I was struck by his sharp questions, wise suggestions, and kindness,” says Prof. Yardena Samuels, Director of the Moross Integrated Cancer Center. “The MICC reflects the depth of his vision and commitment to scientific advancement. We remain deeply grateful for his generosity and for the lasting influence he had on all of us. His support has enabled sustained scientific innovation, fostered interdisciplinary collaboration, and will continue to drive advances in cancer research for years to come.”

Moross acquired the original written correspondence between Dr. Chaim Weizmann and prominent British scientist Harold Davis and

donated it to the Institute in 1989, where it is housed in the archives at Yad Chaim Weizmann. In another tribute to the memory of Dr. Weizmann, in 1993 the Moross family funded the restoration of his laboratory, located in the Daniel Sieff Research Institute building.

“Our father’s special relationship with the Institute was driven by superior people, leaders, and friends, and a **mutual mindset based on logic and curiosity**,” says Dominic Moross, Vice Chair of the International Board.

For his immense contributions, the Weizmann Institute bestowed a PhD *honoris causa* upon Mandy Moross in 1998. He and Edna are also members of the Institute’s prestigious President’s Circle.

Jewish continuity

Known for his refined manners and etiquette, Moross was also a family man with a strong sense of

Top: Mandy with sons David (left) and Dominic at the 2015 International Board. Bottom, from left: Dominic, David, Edna, and Phillip Moross.



commitment to Jewish continuity. He attached utmost importance to inspiring the next generations of his family to become involved in Weizmann, and his passion has rubbed off on his four children: sons Dominic, David, and Philip and daughter Karen Siem, all supporters of the Institute in their own right. In 2025, Dominic was elected Vice Chair of the International Board of the Weizmann Institute. David and Karen are members of the International Board and also close friends and generous supporters.

“Philanthropy was always part of the value system in our family—it is in our DNA,” Karen shared in the 2013 interview. “And at the heart of it has always been the Weizmann Institute, which my father views as the jewel in Israel’s crown.”

“The output from this Institute is disproportionate to its small size. It is unique in that sense,” Mandy Moross said in 2010. “But my principal drive has always been and is still that if the Jewish people don’t stand up for this Jewish state, [Israel’s] future is at risk, especially now when you have this international public opinion condemning the State of Israel, without justification in my opinion ... I think that there is no better way of demonstrating what this state can produce for the world than the [Weizmann] Institute.”

“Our father’s special relationship with the Weizmann Institute of Science was driven by superior people, leaders, and friends, and a mutual mindset based on logic and curiosity,” says Dominic. “For him, Weizmann is a symbol of the Israeli and Jewish people’s superlative contribution to the world, a reflection that ‘Jews are never satisfied.’”

Believing in the brain gain

“I am not a religious man and my children aren’t religious, but I want them always ... to be identified with Jewishness. And that’s why Israel’s survival is important on a personal level,” Moross said in 2010. “But on

“Mandy’s support has enabled sustained scientific innovation, fostered interdisciplinary collaboration, and will continue to **drive advances in cancer research** for years to come,” says Prof. Yardena Samuels.

a much broader level, Jews of my generation have never lived so free as we have in the last 62 years” since Israel’s founding in 1948.

“Just think about our history: persecution, abuse, humiliation ... We had no state, no power base.”

Always cognizant of the next generation, Moross thought that the Institute’s success in recruiting young scientists to join its ranks was the clearest sign of the health of Israel’s future.

“Time and again,” he said, “Israelis come back to Israel (after their postdoctoral fellowships abroad), not only because the Institute itself makes offers that can closely compete with the best Western universities, but also because their families are in Israel and they want their children to grow up there. To many people who think Israel is under threat, this is an amazing and important thing for them to hear: that this country and this Institute have created the right conditions to bring back the top minds and for these people to educate the next generation of leading scientists.”

THE LEGACY LIVES ON

Visionary gift establishes the Edna and Mandy Moross Quantum Institute

The Moross family recently announced its decision to endow a new research entity on campus: the Edna and Mandy Moross Quantum Institute, carrying forward a legacy of extraordinary commitment to Weizmann science.

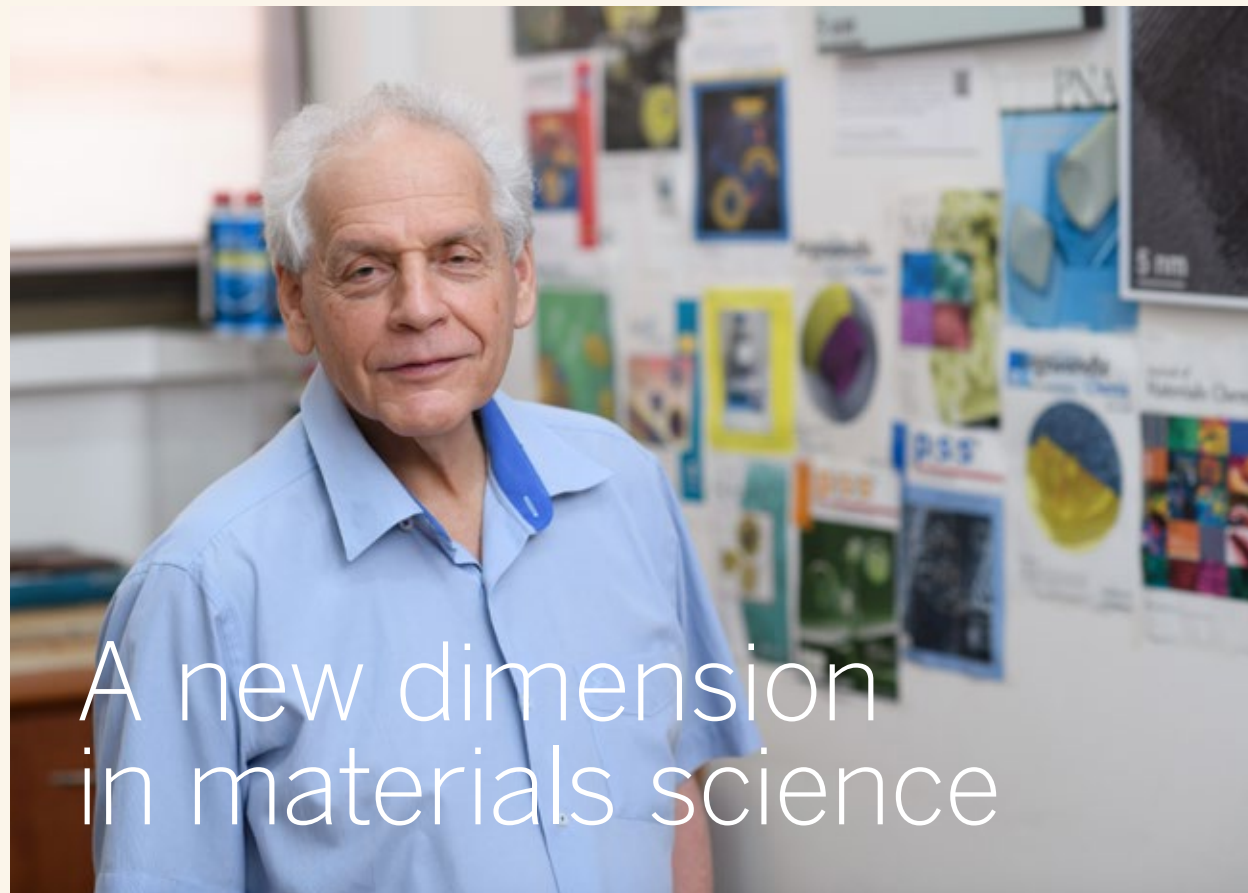
During his lifetime, Mandy Moross’s transformative generosity supported computer science and mathematics, life science, physics, and science education. He also established the Moross Integrated Cancer Center (MICC)—one of the Institute’s most important flagship projects for biomedical research. The family’s endowed gift to support quantum physics ensures that the Moross name will remain synonymous with science in service of our future.

“A humanist by nature who was always in search of the truth, our father believed in the power of personal, frequent, honest interaction to find solutions to problems, always with the aim of making a positive universal impact on society,” shares Mandy’s son Dominic Moross, Vice Chair of the International Board of the Weizmann Institute, on behalf of the family. “This was the prime driver behind building the MICC and now the Edna and Mandy Moross Quantum Institute, two entities which will benefit mankind for generations to come.”

“In supporting quantum research, I think Mandy would have been proud of how his legacy will continue to reverberate in scientific advances made possible by his generosity—and that of his family,” Weizmann President Prof. Alon Chen says. “We are forever indebted to him for his support and vision.”



From left: Shimshon Harel, Chair of the Weizmann Institute Executive Board, Edna and Mandy Moross, and Prof. Moshe Oren, founding director of the Moross Integrated Cancer Center, at the dedication ceremony in 2019.



A new dimension in materials science

Prof. Reshef Tenne honored with the 2026 Israel Prize for reshaping the field of nanomaterials

Prof. *Emeritus* Reshef Tenne of the Department of Molecular Chemistry and Materials Science has been awarded the 2026 Israel Prize in Chemistry and Chemical Engineering Research, one of the country's highest honors.

Over a career spanning five decades, Prof. Tenne has played a defining role in shaping modern materials science. In 1992, he discovered a new class of inorganic nanomaterials—fullerene-like structures and nanotubes—a breakthrough that transformed nanochemistry. These materials exhibit unique electrical, magnetic, and optical properties, with applications ranging from advanced lubricants to aerospace and medical technologies.

The Israel Prize Committee praised the profound scientific and national impact of Prof. Tenne's work, describing him as "one of Israel's most important and prominent scientists" who "has made an enormous contribution to materials science and to physical and inorganic chemistry."

"Reshef opened up an entirely new field of research on nanomaterials," says Weizmann Institute President Prof. Alon Chen. "His work has had an amazing impact on Israeli industry, and his mentorship has played an invaluable role in training students and researchers. We extend our warmest congratulations to him upon receiving this prestigious honor."

Beyond his breakthroughs in the lab and his leadership within the chemical sciences, Prof. Tenne has trained generations of young scientists and helped position Israel at the forefront of global nanomaterials research.

"It gives me great satisfaction to know that I've contributed to the careers of many talented people in the field, both in industry and academia," he says.

Originally from Kibbutz Usha in northern Israel, Prof. Tenne earned his PhD in theoretical chemistry from the Hebrew University of Jerusalem before joining the Weizmann Institute in 1979.

Over the course of his career, he has received numerous prizes and accolades, including the Von Hippel Award, the highest distinction of the Materials Research Society (2023); the EMET Prize, from the EMN Foundation for the Advancement of Science, Art and Culture in Israel (2020); the Rothschild Prize in Chemical Sciences and Physical Sciences (2016); and the Landau Prize of Mifal HaPais–Israel National Lottery in Nanotechnology (2006).

In 2011, Prof. Tenne was elected to the Israel Academy of Sciences and Humanities.

Blazing trails while hunting peptides

Prof. Yifat Merbl's bold research mapping the products found in the 'cellular garbage can' is winning her accolades in scientific circles and beyond

By Noga Martin

Prof. Yifat Merbl of the Department of Systems Immunology has been honored by numerous organizations in Israel and internationally over the past year for her cutting-edge research.

In December, she was named to *Nature's* 10, a list of the ten people who shaped science in 2025. Dubbed the "peptide detective," the editors at *Nature* recognized her discovery of an entirely new part of the immune system by digging through cellular trash.

Globes magazine placed Prof. Merbl on their 2026 list of the 50 most influential women in Israel, describing her findings as a gateway to a whole world of potential drugs, including in the fight against cancer, and applications in diseases such as Alzheimer's and multiple sclerosis.

Other scholarly recognitions include the Trailblazer Cancer Research Grant from the American Association for Cancer Research, awarded for groundbreaking work with significant therapeutic potential.

She is also part of a Cancer Grand Challenges-winning team and recently received the 2026 Israel Immunological Society Award.

On the Weizmann faculty since 2014, Prof. Merbl studies how proteins are modified, regulated, and degraded within cells. Together with her team, she investigates how disruptions in these pathways contribute to cancer, autoimmune disorders, and infection, while also uncovering new opportunities for diagnostics and therapeutic development.

A focus of their work is the proteasome—the "cellular garbage can" that recycles proteins by breaking them into smaller fragments. Prof. Merbl pioneered technologies to map these degradation products and understand how they influence immune signaling and disease mechanisms. Her research has revealed that during bacterial infections, proteasomes produce increased levels of small protein fragments, known as peptides, some of which function as a newly identified class of antimicrobial agents—effectively "natural antibiotics" generated continuously within the body.

The findings suggest that the cells' "dumpsters" might play a key role in fighting infection, opening a promising new avenue for antimicrobial therapies in an era of increasing antibiotic

resistance. Beyond infectious disease, this discovery points to broader therapeutic potential, including strengthening immune protection in conditions where it is compromised, such as during cancer or its treatment.

Notably, Prof. Merbl is being lauded outside of scientific circles as well. In early 2026, she was awarded the Knight of Honor by the Peres Center for Peace and Innovation, which commends contributions to society. She also received an honorary recognition from Rehovot Mayor Matan Dil, the RUTH Conference Women of the Nation Award, and the Halutzim (Pioneers) Award from Unión Sefaradí Mundial, an international umbrella organization representing Jews of Sephardic heritage.

YIFAT MERBL IS SUPPORTED BY:

- The Lotte and John Hecht Memorial Foundation
- The Knell Family Institute for Artificial Intelligence



AWARDS & HONORS

Distinguished by discovery

A snapshot of prizes recognizing the originality and impact of Weizmann Institute scientists over the past year

By Noga Martin

FUNDAMENTAL FUNCTIONS



Prof. Maya Schuldiner from the Department of Molecular Genetics is the 2026 recipient of the prestigious **Otto Warburg Medal**, for her “fundamental contributions to the understanding of the targeting process of proteins to organelles and the discovery of several contact sites of organelles.”

A molecular geneticist who studies cell function, Prof. Schuldiner has developed innovative tools that elucidate the roles of previously unstudied genes and proteins, including robotic microscopy—a technique that enables researchers to track protein location and abundance under various conditions.

Her creative approaches make it possible to explore how organelles communicate and respond to environmental changes such as stress. Using these tools, the Schuldiner lab has discovered functions for dozens of uncharacterized proteins in

organelles, advancing an area of profound importance to biomedical research. Disruptions in organelle function are linked to metabolic disorders, age-related conditions, cancer, and neurodegeneration.

Named for German physiologist Otto Warburg, the 1931 Nobel Prize laureate in Medicine, the medal is presented annually by the German Society for Biochemistry and Molecular Biology and celebrates scientists who have made important contributions to biological chemistry.

“I am honored to receive this prize. For me, it most of all reflects the hard work, ingenuity, passion for science, and creativity of my students and postdocs over the years. They are the ones who truly deserve this recognition, and it has been an honor for me to work with such bright minds and wonderful trainees,” Prof. Schuldiner says.

FINDING BACTERIA IN TUMORS

The 2026 winner of the **Sergio Lombroso Award in Cancer Research** is **Prof. Ravid Straussman** of the Department of Molecular Cell Biology.

Presented by the Weizmann Institute as part of the Sergio Lombroso Program—a broader initiative to support cancer research

collaboration between Israel and Italy—the Lombroso Award recognizes international scientists, medical researchers, and physicians whose work has contributed substantially to the understanding of the causes and mechanisms of cancer, as well as its diagnosis and treatment.

The program was established in 1998 through the estate of the late Sergio Lombroso, a lawyer from Verona, Italy, whose deep commitment to advancing cancer research continues to inspire this vital work. The award will be presented in a ceremony on the Weizmann campus in the fall, in the presence of the Lombroso family.

Prof. Straussman studies the tumor microenvironment and surrounding healthy cells to discover mechanisms that render cancer cells resistant to therapy, as well as bacteria found in human tumors and their role in cancer growth in response to treatment.



In a study published in *Nature Cancer* in 2025, Prof. Straussman and his team demonstrated a link between patient survival in cases of brain metastases and the quantity and diversity of bacteria in their tumors, highlighting how certain bacterial species might make tumors treatment-resistant.

AN OPTIMAL THEOREM



Prof. Irit Dinur of the Department of Computer Science and Applied Mathematics is one of five recipients of the 2026 **Michael and Sheila Held Prize**, from the US National Academy of Sciences.

Established in 2017, the Held Prize shines a light on outstanding, innovative, and influential research in combinatorial and discrete optimization—identifying optimal solutions to complex problems involving many possible combinations and choices—and related areas of computer science.

Prof. Dinur and her team study probabilistically checkable proofs and high-dimensional expansion, fields that bridge mathematics and computer science and capture a notion of “robustness” in computation.

She shares the distinction with Subhash Khot of New York University, Guy Kindler of the Hebrew University of Jerusalem, Dor Minzer of the Massachusetts Institute of Technology, and Muli Safra of Tel Aviv University, in recognition of their collaborative work on the 2-to-2 Games Theorem, which demonstrates why certain seemingly simple problems can be inherently hard to solve.

MAYA SCHULDINER IS SUPPORTED BY:

- The Blythe Brenden-Mann Foundation
- The Knell Family Institute for Artificial Intelligence
- The Dr. Gil Omenn and Martha Darling Professorial Chair in Molecular Genetics

RAVID STRAUSSMAN IS SUPPORTED BY:

- The Abisch-Frenkel RNA Therapeutics Center
- Paul and Stacey Davidoff
- The Elsie and Marvin Dekelboum Family Foundation
- The Fabricant-Morse Families Research Fund for Humanity
- Angela Brandão & Mario Fleck
- Sergio Lombroso International Research Award in Cancer Research
- Moross Integrated Cancer Center
- Andrew R. Morse
- Genny & Selmo Nissenbaum
- Instituto Oncoclínicas
- Susana & Isaías Steinberg

IRIT DINUR IS SUPPORTED BY:

- The Dr. Hymie Moross Professorial Chair

AWARDS & HONORS

Prof. Tamir Klein's eco-physiological research has uncovered new insights into how trees cycle water and nutrients between leaves, stems, and roots. He has even shown evidence for “carbon trade” between the roots of trees located near each other.

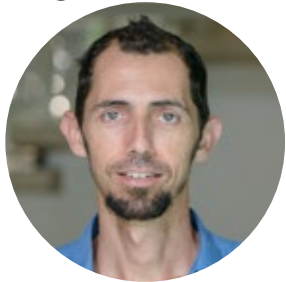
TAMIR KLEIN IS SUPPORTED BY:
• The Henri Gutwirth Research Award

Their findings, which confirm that a close variant of Khot’s Unique Games Conjecture is true, provide the strongest evidence to date for the conjecture and yield new hardness-of-approximation results for fundamental problems such as vertex cover and graph coloring.

The US National Academy of Sciences described their work as “groundbreaking,” hailing the theorem as the “most significant advance and strongest evidence to date for the Unique Games Conjecture, a central open question in theoretical computer science.”

In April 2026, Prof. Dinur was also named the winner of the annual **Landau Prize for Computer Science from Mifal HaPais-Israel National Lottery**. For the last 25 years, the Landau Prize—named after lottery founder Michael Landau—has been awarded to four researchers and four artists who have made major contributions to science and culture.

SECRETS OF THE TREES



Prof. Tamir Klein of the Department of Plant and Environmental Sciences is the recipient of the 2026 **Henri Gutwirth Research Award**, honoring investigators whose work deepens scientific insight while addressing pressing global challenges.

Prof. Klein studies trees and forests and their ability to function as dynamic, adaptive systems. Through comprehensive measurements and analysis, he examines how trees process water, air, and carbon, and how ecosystems acclimate to drought and other environmental stressors—an area of growing importance in Israel and other water-scarce parts of the world.

His eco-physiological research has shown that trees are remarkably diverse and adaptable in their use of water and carbon. He has also uncovered new insights into how trees cycle water and nutrients between leaves, stems, and roots, and has even shown evidence for a certain amount of “carbon trade” between the roots of trees located near each other.

Visitors to the Weizmann campus can observe one of Prof. Klein’s ongoing experiments—sensors placed under the bark of 14 species of trees that measure their carbon intake. In place since 2023, these sensors provide a wealth of information: present and past carbon uptake; which species and individual trees outperform others; and the total tree carbon intake of the entire campus grounds.

The Henri Gutwirth Research Award was established by Aaron Gutwirth, a prominent businessman and philanthropist, in memory of his father, Henri.

“I feel honored to be selected for this prestigious award,” Prof. Klein said. “My students and I are dedicated to studying tree physiology and forest ecology as part of humanity’s efforts to mitigate climate change, and this recognition is very meaningful to me.”

MAKING MOLECULAR WAVES



Dr. Sergey Semenov of the Department of Molecular Chemistry and Materials Science is one of three laureates of the 2026 **Blavatnik Awards for Young Scientists in Israel**.

Dr. Semenov explores how complex, dynamic behavior can be built from simple chemical building blocks. By designing molecules that interact under controlled conditions, his work shows how chemical systems can generate rhythms, traveling waves, patterns,

and materials that change shape on their own. These behaviors are common in living systems but are very challenging to design.

His research reveals new principles for programming matter to organize itself, opening new possibilities for life-like materials that respond, adapt, and form structure without external control—propelling efforts to create smarter materials and deepen understanding of how complexity emerges in nature.

Since 2017, the Blavatnik Family Foundation, in partnership with the Israel Academy of Sciences and Humanities and The New York Academy of Sciences, has conferred the Blavatnik Awards for Young Scientists in Israel on researchers aged 42 or younger whose work has the potential to transform lives, advance scientific understanding, and address global challenges.

Dr. Sergey Semenov’s work reveals new principles for programming matter to organize itself—demonstrating how carefully designed chemical building blocks can give rise to complex, life-like behavior.

AWARDS & HONORS



Empower Tomorrow launches in Florida

In February, the American Committee for the Weizmann Institute of Science brought the *Empower Tomorrow* campaign to Florida, hosting the first regional celebrations following its global launch in 2025. The gatherings in Boca Raton and Miami united longtime friends, new supporters, and distinguished Weizmann leaders to highlight the Institute's worldwide impact and vision for the future.

Held at The Boca Raton and Miami's Historic Alfred I. DuPont Building, the events featured presentations from Prof. Alon Chen, President of the Weizmann Institute; Prof. Avishay Gal-Yam, Vice President for Development and Communications; and doctoral student Carmel Sochen from the Department of Immunology and

Regenerative Biology. Their talks offered a vivid look at Weizmann research—from particle physics to the microbiome—and the curiosity-driven scientists behind it.

American Committee National Chair Harvey Knell reflected on investing in world-changing science, a commitment he and his wife, Dr. Ellen Knell, have demonstrated most recently through the establishment of the Knell Family Institute for Artificial Intelligence. American Committee Board Members Dr. Marilyn Perlman and Ronald Sklare spoke about their families' legacies and generations of support across scientific fields.

Board Member Tamar Sela reflected on her mother, Sara Sela, and father, Prof. Michael Sela z"l, the Institute's sixth president and co-creator of the breakthrough multiple sclerosis therapy Copaxone®. Dr. Arabella Duffield, Chair of Weizmann UK, honored her mother, Dame Vivien Duffield and grandfather, Sir Charles Clore, whose early leadership shaped the modern Weizmann Institute.

Featured presenters at the *Empower Tomorrow* launch in Miami (from left): Prof. Alon Chen, Carmel Sochen, Tamar Sela, Harvey Knell, Dr. Marilyn Perlman, Dave Doneson, Prof. Avishay Gal-Yam, Dr. Arabella Duffield, Alan Fischer, and Ronald Sklare. (Photo by Ayubi Photography)

In Boca Raton, Larry Wolfe underscored the importance of global collaborations, including the Michigan-Israel Partnership for Research and Education. In Miami, Alan Fischer described how the Weizmann community has enriched his life and the meaning he finds in dedicating himself to a larger cause.

Across the two events, a shared message emerged: *Empower Tomorrow* represents a defining moment for science and society.

"No matter what tragedy, challenge, or adversity we face today, we can look toward the Weizmann Institute," said Dave Doneson, CEO of the American Committee. "Now is the time to shape the future of Weizmann, the future of science, and the future of human prosperity around the world."

Weizmann World

WEIZMANN
WORLD

Science in the snow

Against the breathtaking backdrop of the Swiss Alps, Weizmann UK and the Swiss Society of Friends of the Weizmann Institute joined forces for a special event in Gstaad, Switzerland in February 2026, celebrating scientific innovation and philanthropic partnership.

The gathering opened with a welcome dinner hosted by Dame Vivien Duffield, Life President of Weizmann UK. Dame Vivien spoke movingly of her father, Sir Charles Clore, whose vision laid the foundation for her decades-long support of scientific advancement through the Clore Israel Foundation. She then introduced Weizmann President Prof. Alon Chen, who shared his goals for Institute and outlined the ambitious objectives of the *Empower Tomorrow* global campaign.

The following day, guests gathered for a morning dedicated to science, with an introduction by Dr. Arabella Duffield, Chair of Weizmann UK.

Prof. Chen returned to the podium to present the latest insights from his research into the neurobiology of stress.

Prof. Yifat Merbl—recently named by the prestigious journal *Nature* as one of the 10 people who shaped science in 2025—presented her discovery of a previously unknown layer of the immune system, with the potential to unlock an entirely new class of therapeutics, ranging from infectious disease to cancer and immune-related disorders. Finally, Prof. Roei Ozeri spoke about his work in the fast-evolving field of quantum computing, including his role in the development of Israel's first quantum computer.

The program concluded with closing remarks from Eric Stupp, Chair of the Swiss Society of Friends.

UK



Prof. Alon Chen presenting his research on the neurobiology of stress at the Gstaad event.

Weizmann World

EUROPE

A universal language of hope and unity

In November 2025, the Swiss Society of Friends of the Weizmann Institute of Science, chaired by Eric Stupp, celebrated its 25th Annual Lecture in Zürich, bringing together 120 participants, including longtime supporters and new friends united by a shared commitment to innovative science that benefits humanity.

Keynote speaker Prof. Efrat Shema from the Department of Immunology and Regenerative Biology, presented her pioneering research on a blood test for the early detection of breast cancer and the diagnosis of brain tumors in children. The following day, she delivered an engaging keynote in Vaduz at the Annual Lecture of the Liechtenstein Society of Friends of the Weizmann Institute, chaired by Rita Kieber-Beck.

Members of the Board of the Liechtenstein Society of Friends with ECWIS representatives and Prof. Efrat Shema (center) at the Society's annual event.

The momentum continued in January 2026 in Munich, where more than 50 guests gathered for an evening exploring the curiosity-driven philosophy of the Weizmann Institute, presented by Zohar Menshes, Executive Vice President of the European Committee of the Weizmann Institute of Science (ECWIS). The event was graciously hosted by Harry and Aline Habermann and organized by the German Society of Friends, chaired by Sidney Jachimowicz.

In February, ECWIS launched its "Meet Weizmann Online" series with an inaugural virtual event, hosted by the German Society of Friends,

bringing together participants from across Europe. Dr. Yoav Livneh from the Department of Brain Sciences discussed how communication between the brain and body shapes both mental and physical health.

Guests were welcomed by Bob Drake, Chair of the International Board and the European Committee, while Zohar Menshes shared updates and achievements from campus.

Across these gatherings—in person and online—a consistent picture emerged: a community committed to the Weizmann Institute and supporting new paths to discovery.



Curiosity and community endure

Even amid ongoing security challenges, the Israeli Friends of the Weizmann Institute of Science continue to keep the spark alive—meeting, connecting, and taking action to strengthen science, resilience, and the future.

Rear Admiral Daniel Hagari (Ret.), who served as the IDF spokesperson throughout the Iron Swords War and became a steady, reassuring presence in Israeli homes, took part in a live interview with journalist Yoav Limor at an evening hosted by WeizmannVibe, the next-generation forum of the Israeli Friends. Hagari reflected on the demands of communicating during one of Israel's most difficult periods as well as navigating the global battle for public opinion.

Following this moving encounter, Prof. Yifat Merbl spoke about a different kind of battle—against bacteria—sharing her groundbreaking research. She also recounted her personal experience in June of 2025, running to her lab in flip-flops to save irreplaceable

biological samples after the building was hit by the Iranian missile strike. "Determination and passion for science cannot be taught," she said.

At a different event, members of the Israeli Friends' Science Forum gathered at the Hilton Tel Aviv to hear Dr. Leeat Keren present her work with hospitals to map tumor samples using AI tools and predict how patients might respond to immunotherapy. She also spoke at a WeizmannVibe event, where her talk was followed by former combat commander Omri Rozenblit, who spoke about his journey—from fighting in the Gaza Strip, to losing his leg in battle, through his ongoing rehabilitation process, and later competing on the Israeli version of *The Amazing Race*.

In February, WeizmannVibe members visited campus, where they toured Prof. Nachum Ulanovsky's lab, explored their unique bat tunnel, and learned about his team's research using bats to study spatial orientation.

Across these gatherings, the message was clear: the Israeli Friends continue to show up, building a community that supports bold, brilliant ideas.



From left: WeizmannVibe Chair Amir Shaltiel, Rear Admiral Daniel Hagari (Ret.), Yael Goren-Wegman, Executive Director of the Israeli Friends of the Weizmann Institute, and Weizmann Executive Board Member Shay Teitelbaum.



Weizmann World

FRANCE

Deepening ties, furthering impact

Throughout the past year, Weizmann France has actively focused on strengthening scientific ties and deepening engagement with its community of supporters. This effort culminated in Weizmann President Prof. Alon Chen's visit to Paris in December. During his trip, he met with leading donors as well as key partners in the French scientific ecosystem, including from the Institut du Cerveau, Institut Imagine, and l'Institut Servier,

reaffirming a shared dedication to advancing cutting-edge research and international collaboration.

David Weizmann, Director General of Weizmann France, and his wife Mathilde hosted an intimate gathering of donors, during which Prof. Chen shared insights into his neuroscience research and reflected on the aftermath of the Iranian missile strike on the Rehovot campus last year. His perspective gave guests a clear sense of how scientific work continues under geopolitical pressures, underscoring both the resilience of Weizmann Institute

researchers and the importance of sustained international support.

The talk moved beyond theory as Prof. Chen made complex concepts accessible, and not only offered attendees an introduction into key techniques but, more importantly, a deeper understanding of the profound impact of neuroscience and how such important work, actively pursued at the Weizmann Institute, has the potential to reshape entire industries and expand the frontiers of knowledge.

Together, these initiatives illustrate Weizmann France's mission: to connect people, ideas, and institutions in support of scientific excellence. By creating moments of dialogue and discovery, the organization continues to strengthen its role as a vital bridge between France and one of the world's leading research institutes.



Prof. Alon Chen speaking at an intimate gathering hosted by David Weizmann in Paris.



(From left) Susan Stern, Prof. Eran Hornstein, and the Richter Family Office's Richard Reitman, Michael Dube, and Serge Stepanian in Toronto. (Photo by Jake Stendel)

Breaking down brain science in Toronto

Despite all that medicine can do, it still cannot explain why the brain breaks down. Last November at an event in downtown Toronto, Prof. Eran Hornstein, Head of the Weizmann Institute's Department of Molecular Neuroscience within the Azrieli Institute for Brain and Neural Sciences, offered some 50 guests—many new to Weizmann—a closer look at that question and how his lab is working to answer it.

Prof. Hornstein studies progressive brain disorders, including amyotrophic lateral sclerosis (ALS) and Alzheimer's disease. Yet, as he noted, understanding how the brain functions remains "one of the biggest mysteries of the universe."

In one line of study, his lab identified a common antibiotic as a potential therapy for ALS, which has already advanced to early clinical testing. The drug was recently evaluated in a first-in-human trial at the Montreal Neurological Institute-Hospital, supported by a partnership with the Canadian pharmaceutical company Apotex. Results showed the therapy was safe

and biologically active, paving the way for larger trials.

Prof. Hornstein also detailed his team's discovery of a link between ALS and Alzheimer's; specifically, how an abnormal protein known to drive nerve cell death in ALS may also play a role in Alzheimer's. The implication is significant. The commonality could tie together two very different diseases and suggests that drugs developed for one could be relevant to the other.

The event was co-hosted by Weizmann Canada and the Richter Family Office, including Richard Reitman, a member of Weizmann Canada's National Board and Senior Manager at Richter, and Michael Dube, a partner at the firm.

Reflecting on the evening, Susan Stern, CEO of Weizmann Canada, pointed to what set it apart: "Gatherings like this bring to life what makes Weizmann distinctive: curiosity-driven research, the freedom to explore, and basic science discoveries that can lead to real impact in unexpected ways. That kind of environment is only possible because of our community of supporters."

WEIZMANN WORLD

CANADA

Weizmann World

O LATIN AMERICA

Expanding horizons: science and collaboration

The connection between Latin American partners and the Weizmann Institute took a major step forward this year, through a Weizmann delegation's unforgettable trip to Chile, a growing community of friends, and scientists from the region gaining greater recognition from the Institute.

Led by Prof. Avishay Gal-Yam, the Weizmann Institute's Vice President for Development and Communications, the delegation to Chile in March included Dr. Sagi Ben-Ami and Prof. Oded Aharonson, as well as PhD students Yahel Sofer and Daniella van der Boom. They were joined by international friends, including Weizmann Brazil President Mario Fleck and Weizmann Chile President Ariela Agosin.

Lectures on physics and astrophysics were held in a range of exceptional settings—from private gatherings in Santiago hosted by Agosin and businessman Andrés Ergas to a visit to the Giant Magellan Telescope in the Atacama Desert where Weizmann, in collaboration with 14 international institutions, is developing instruments for what

will be the world's most powerful telescope.

"Carrying out this visit, despite the war in Israel, was deeply appreciated by our Chilean friends and those who traveled to share the impact of Weizmann astronomy under the Atacama stars," says Dany Schmit, CEO of the Latin American Committee.

Recognizing excellence at the International Board

In November 2025, 40 friends from Mexico, Brazil, Argentina, Chile, and other countries in the region traveled to Israel to attend the 77th Annual General Meeting of the International Board on the Weizmann campus, driven by a collective

commitment to basic science and strengthening the Institute's international community.

During the visit, entrepreneur Bruno Mariani was presented with the Weizmann Award in the Sciences and Humanities—the first Brazilian to receive the distinction—in recognition of his leadership in forest restoration. Weizmann President Prof. Alon Chen presented the award and appointed Mr. Mariani as Chair of the Latin American Sustainability Hub, a new initiative that fosters exchange between regional leaders and Institute scientists.

Weizmann delegation at the Giant Magellan Telescope construction site in Chile. (Photo by Francisco Nunez)



Inside the engine room

A look at the super machines driving biomedical discovery—and the technicians who have mastered them

By Dinah Elashvili

In one building at the northern edge of the Weizmann campus, microscopic droplets are launched through the air using ultrasonic sound waves, landing with near-perfect precision in wells barely visible to the human eye. Nearby, robotic systems move plates between incubators and screening platforms while sequencing machines process millions of fragments of genetic information.

A few decades ago, technologies like these only existed in science fiction. But today, the picture of science is no longer a researcher at a bench, pipette in hand, painstakingly running one test at a time. Modern experiments increasingly depend on something far larger—vast technical systems capable of analyzing millions of cells, screening thousands of compounds, and generating enormous volumes of genomic data.

At the Weizmann Institute, much of this core facility ecosystem is housed within the Nancy and Stephen Grand Israel National Center

for Personalized Medicine (G-INCPM), quietly powering research across disciplines through its specialized units. Situated within the same building as the Institute's iconic Solar Tower, the G-INCPM serves as a shared resource and infrastructure for scientists and students across campus, as well as partners from hospitals, universities, and biotech companies in Israel and abroad, propelling the evolving field of personalized medicine.

Precision scale

Rather than focusing on a single area, the Grand Center supports a wide range of projects, from drug discovery and protein profiling to developmental biology and genomic analysis. By housing advanced automation, sequencing, computational analysis, and high-throughput screening under one roof, the G-INCPM enables scientists to conduct experiments at a scale and level of precision that would be difficult—if not impossible—for most

individual laboratories to achieve on their own.

At the Maurice and Vivienne Wohl Institute for Drug Discovery, for example, researchers can test enormous libraries of chemical compounds against biological targets at an unprecedented scale. One of the Wohl Institute's most remarkable instruments is the Echo 555—an acoustic liquid handler that transfers fluids using ultrasonic sound waves instead of traditional pipetting.

"It's almost like creating a microscopic splash," explains laboratory technician Miki Lavi, who utilizes the Echo 555 to help scientists rapidly screen massive libraries of chemical compounds to see how they affect specific biological processes. "A tiny droplet jumps from the source plate and lands precisely in the destination plate."

Up to 1,536 droplets—each as small as 2.5 nanoliters—can be packed onto a single plate, allowing thousands of experiments to be carried out simultaneously. This level of exactitude is essential.

BEHIND THE
SCENES

When screening hundreds of thousands of compounds, even slightly larger liquid volumes would quickly consume valuable chemical compounds and greatly increase costs. The Echo allows researchers to work at astonishing speed and scale while conserving precious samples.

These capabilities are especially important in early-stage drug discovery, where scientists may need to test thousands of compounds in search of a small number that interact with a specific protein, enzyme, or disease pathway. What would once have taken years of manual work can now be carried out in days or weeks.

Flexing machinery muscles

Another key instrument at the Wohl Institute, the Certus Flex, is designed for other experimental needs. While the Echo specializes in transferring ultra-small droplets with extreme precision, the Certus Flex handles a broader range of liquids, including more viscous materials. Operating reusable dispensing valves, it rapidly delivers liquids into experimental plates at volumes starting around 50 nanoliters. Together, these systems allow thousands of experiments to be assembled, processed, and analyzed quickly and accurately on a single plate.

Our sequencing platform “generates about **twice as much data** at roughly half the cost of previous systems,” says lab technician Yuval Elazari.

As just one example, these platforms helped support the international COVID Moonshot campaign started in 2020 by



Yuval Elazari with the NovaSeq X Plus.

enabling scientists to test thousands of chemical compounds against coronavirus targets and identify promising antiviral candidates.

“We’re running equipment that very few places in Israel even have,” Miki says.

Elsewhere in the building, the Crown Institute for Genomics addresses another defining challenge of modern biology: the immense scale of genomic data. Researchers there use sophisticated sequencing systems to examine DNA, RNA, single cells, and spatial genomic samples in extraordinary detail. According to Yuval Elazari, a laboratory technician at the Crown Institute, one of the facility’s most important instruments is the NovaSeq X Plus sequencing platform.

“It generates about twice as much data at roughly half the cost of previous systems,” Yuval explains. “Currently, we are the only academic institution in Israel operating this platform.”

The NovaSeq X Plus processes massive amounts of biological information simultaneously, enabling scientists to study gene activity across tissues, compare cellular populations, and analyze the behavior of individual cells.

The troubleshooters

For scientists like Prof. Jacob Hanna from the Department of Molecular Genetics, these tools have dramatically expanded the boundaries of biological research. The Hanna lab designs and analyzes

synthetic embryo models—structures grown entirely from stem cells that mimic early embryonic development outside the uterus.

“To understand how closely these models resemble a real embryo, we need to examine biology at the level of individual cells,” Prof. Hanna adds. Using the Crown Institute’s single-cell sequencing technologies, including the Chromium 10x System, together with computational analysis provided by specialists from the G-INCPM’s Ilana and Pascal Mantoux Institute for Bioinformatics, his group can compare synthetic embryo models to natural embryos, track cell development over time, and identify subtle differences between cell populations.

The Hanna team’s internationally renowned work has already helped overturn long-standing assumptions in developmental biology. Thanks to the unprecedented detail provided by

the Chromium 10x, they were able to show that stem cells could generate not only embryonic tissues, but also cell types resembling placental

“The equipment is critical,” says Prof. Jacob Hanna, “but staff expertise is equally important.”

tissue—something many scientists previously believed was impossible.

Prof. Hanna emphasizes that the G-INCPM provides far more than modern infrastructure and advanced equipment. Scientists and students are trained on-site by expert staff who oversee experiments and help troubleshoot highly complex workflows.

“The equipment is critical,” he says, “but staff expertise is equally important.”

As biology becomes increasingly data-driven and automated, facilities like the G-INCPM are reshaping how research is conducted. Discoveries that once depended on small-scale experiments can now emerge from integrated systems that combine robotics, genomics, chemistry, imaging, and computation.

Much of this work takes place quietly, behind laboratory doors and with the help of machines few people will ever see and even fewer will ever know how to use. Yet these hidden technological engines and the experts running them are increasingly driving biomedical discovery—and enabling breakthroughs that have the potential to improve countless lives.

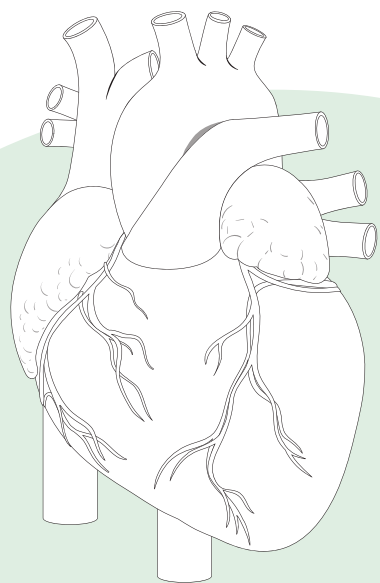
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Miki Lavi with the Certus Flex. “We’re running equipment that very few places in Israel even have.”

BEHIND THE SCENES

Revealing the heart's hidden echo



Weizmann alum Itay Kezurer's startup is putting lifesaving cardiac ultrasounds into more hands

By Anne Sperling

Imagine first responders performing a cardiac ultrasound at the side of the road, with real-time clinical cardiac ultrasound images and diagnosis.¹ That long-held aspiration may soon be reality, thanks to technology entrepreneur and Weizmann alum Itay Kezurer, who aims to revolutionize ultrasound imaging by advancing artificial intelligence-driven software to ensure healthcare professionals can perform high-quality cardiac ultrasound (echocardiography or "echo") whenever and wherever necessary, regardless of their sonography proficiency.

Kezurer is the co-founder of UltraSight™, a medical device company that grew out of his work as an MSc student under Prof. Yaron Lipman in the Department of Computer Science and Applied Mathematics. UltraSight software employs AI/deep learning to first guide users to position the device correctly and then help them interpret the resulting images

to support immediate medical decision-making.

As healthcare providers will tell you, the quality and value of an echo image are almost entirely determined by the sonographer's skills. UltraSight ensures appropriate capability in performing cardiac ultrasound across a variety of settings, at the point of care—whether in an emergency room, a remote setting, an ambulance, a clinic, or a hospital. The software is designed to guide the user in real time to capture and produce quality, accurate cardiac images.

The user is then able to diagnose cardiac disease states, such as aortic stenosis, or to recognize misaligned cardiac implants. In December 2025, the US Food and Drug Administration granted UltraSight clearance to expand its AI-powered cardiac echo platform across a range of ultrasound systems. The software is now compatible with handheld, laptop, and cart-based ultrasound systems.

"The goal isn't to replace highly skilled sonographers—we'll always need and want trained sonographers for full and comprehensive exams," says Kezurer. "But there are times when all you need is a few images, particularly in emergency or routine-care settings, which are exactly the times when a skilled sonographer may not be

available. In those cases, UltraSight can guide non-experts to get the echo images and interpretation they need to make decisions about very specific issues. That's the value proposition: we're ensuring reliability for cardiac patients, the most critical patients in the world, so that we can save their lives. We're democratizing echo."

Building from the ground up

By the time Kezurer had completed his MSc studies in 2015, he was ready to make an impact in the emerging field of AI-driven medical technology. With encouragement from Prof. Lipman and especially from Prof. Mordechai (Mudi) Sheves—then Weizmann's Vice President for Technology Transfer and Chairman of the Board of Directors of Yeda Research and Development, Weizmann's tech transfer arm—Kezurer began pursuing his dream of applying geometrical deep learning to solve cardiovascular ultrasound imaging.

He met with several clinicians to identify the areas of greatest need, making "multiple pivots" along the way and traveling to the US to fine-tune his business model. Together with Dr. Achi Ludomirsky, an Israeli-trained professor of pediatric cardiology and pediatrics

at NYU School of Medicine, Kezurer initially considered possibilities for imaging children, but soon realized the need to expand their focus to adult patients. Kezurer, Prof. Lipman, and Dr. Ludomirsky co-founded UltraSight in 2018. Davidi Vortman has served as CEO since mid-2020.

"Building UltraSight from the ground up with Itay and Achi was a truly exhilarating journey," reflects Prof. Lipman. "We were operating in the relatively early days of deep learning, and the Weizmann Institute provided the ideal ecosystem to support our vision. It allowed us to take an emerging, powerful technology and translate it into a novel, exciting application that holds profound meaning for the medical community."

The process of identifying investors took an interesting turn. At one particularly memorable meeting at Yeda, Kezurer met with a delegation from a South Korean firm. A representative approached him and asked for a cellphone charger—in perfect Hebrew. It turned out the man's mother had earned a graduate degree in Israel, where he was born and lived for the first years of his life. The company, Yozma Group Korea, became a key early investor in UltraSight.

Kezurer notes that Prof. Irit Sagi, who served as VP of Technology Transfer from 2019 to 2025, also provided invaluable support, particularly as he endeavored to raise funds during the COVID lockdown.

Today, UltraSight has 24 employees worldwide, with regulatory and research and development departments in Ness Ziona and various outreach offices in the United States. The company has a strong, growing partnership with a leading medical device company in the US, and maintains clinical collaborations with hospitals in Florida and Texas, as well as the Mayo Clinic in Minnesota.

ULTRASIGHT

Paying it forward

Kezurer shares that he is tremendously grateful for the support he received from Yeda throughout his journey and would like to help the next generation of budding Weizmann entrepreneurs. He recently connected with former Israeli MK and Minister of Science and Technology Yizhar Shai, whose son, Staff Sgt. Yaron Uri Shai (z"l) was killed while defending Kibbutz Kerem Shalom

Kezurer is now organizing, together with Yeda, a competition on the Weizmann campus to select a new startup for mentoring, in memory of Sgt. 1st Class (res) Alon Kleinman (z"l), a 21-year-old physics student killed in battle in Gaza in 2024. The competition gives six groups the opportunity to present their idea to a panel of three judges with expertise in tech transfer. The winning group is awarded personalized, one-on-one mentorship



"We're ensuring reliability for cardiac patients, the most critical patients in the world, so that we can save their lives. We're democratizing echo," says Itay Kezurer.

from terrorists on October 7, 2023. A few months later, Shai launched Next October, a project to create 1,200 new startups, each in honor of one of the victims of the brutal Hamas onslaught.

from Kezurer and the UltraSight team to jumpstart the process of turning their team's discovery into a commercial product and startup. Prominent Israeli patent attorney Heidi Brun, with whom Kezurer works, has also offered to help the winning group prepare and submit a provisional patent application.

"The competition is a way to help participants distill their idea and their story, to go from focusing just on the scientific discovery to seeing how it addresses a real problem," says Kezurer. "It's a nice way to honor the memory of Alon and for me to express my gratitude to Weizmann."

Top: UltraSight's AI-guided platform helps users capture and interpret images in real time, enabling reliable cardiac ultrasound at the point of care.

¹ Pending regulatory approval.

Morris Kahn



Saying goodbye to a visionary businessman, benefactor, and dear friend and supporter of the Institute

Devoted philanthropist, pioneering force of Israeli high-tech, and treasured friend of the Weizmann Institute of Science, Morris Kahn passed away on January 1, 2026. He was 95 years old.

Morris grew up in South Africa and immigrated to Israel in 1956 at the age of 26 with his late wife, Jacqueline, and two sons, David and Benjamin. A serial entrepreneur, he launched *Dapei Zahav* (the Israeli yellow pages) in 1967, which published the first classified phone books in Israel. In 1982, he co-founded Aurec Group, which would later become Amdocs, now one of the world's leading software companies for communications and billing services. Morris also founded Coral World International in Eilat, which operates underwater observatories across the globe.

Beyond his business acumen, Morris was a prominent philanthropist, supporting numerous causes, including Israeli universities, health services, and non-profits. He was also the primary donor to SpaceIL, which launched the *Beresheet* lunar mission in 2019. In recognition of his extraordinary generosity, he was selected to light a torch during Israel's 71st Independence Day celebrations.

Morris Kahn was a longstanding friend of the Weizmann Institute, investing in research in immunology and systems biology, as well as science education. In 2006, he received an honorary PhD from the Institute and joined its International Board, becoming a Life Member in 2016.

In a eulogy for Morris, Israeli President Isaac Herzog described him as a visionary, and though his "dreams reached all the way to the moon, he always remained firmly grounded in his love for Israel and care for the Israeli people."

Prof. Igal Talmi



Israel Prize laureate Prof. Igal Talmi shaped modern nuclear physics

Prof. *Emeritus* Igal Talmi, a forefather of nuclear physics in Israel, passed away in February 2026 at the age of 101. His death came only two weeks after that of his wife of 77 years, Chana Talmi, at 100. Over a career spanning decades, Prof. Talmi made seminal contributions to our understanding of the atomic nucleus and established Weizmann as a world-leading center for physics research.

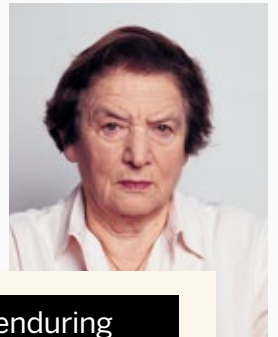
Born in Kyiv in 1925 to Moshe and Leah Smilanski, both Hebrew teachers, Prof. Talmi came to pre-state Israel as an infant after the Soviet authorities shut down Hebrew-language schools. He grew up in the northern moshav of Kfar Yehezkel and studied physics and mathematics at the Hebrew University of Jerusalem under the legendary physicist Prof. Yoel (Giulio) Racah.

Prof. Talmi earned his doctorate at ETH Zürich, in the lab of Nobel laureate Prof. Wolfgang Pauli, and conducted postdoctoral work at Princeton University alongside Nobel laureate Prof. Eugene Wigner. In 1954, Prof. Talmi, along with Prof. Amos de-Shalit, helped establish Israel's first Department of Nuclear Physics at the Weizmann Institute.

His research was critical to our understanding of the shell model of the atomic nucleus, demonstrating in 1956 that the model could match observed nuclear energy levels with striking accuracy. This provided the first clear validation of the model, cementing it as a defining paradigm in nuclear physics. The book he coauthored with Prof. de-Shalit, *Nuclear Shell Theory*, became a fundamental text in the field. Their work was recognized in 1965 with the Israel Prize in Exact Sciences.

At a celebration marking Prof. Talmi's 100th birthday, former Weizmann President Prof. Haim Harari, who completed his MSc under Prof. Talmi, reflected on his lasting impact, noting that Prof. Talmi "occupies a central place" in the evolution of scientific research and education in Israel.

Prof. Ora Kedem



Prof. Ora Kedem left an enduring mark on both fundamental research and practical innovation

Prof. Ora Kedem (née Katz), a chemist whose work transformed membrane science, thermodynamics, and desalination technologies, passed away in February 2026. She was 101.

Born in Vienna in 1924, Prof. Kedem immigrated to pre-state Israel in 1940 at the age of 16, narrowly escaping German-occupied Austria. While pursuing her master's degree in chemical physics at the Hebrew University of Jerusalem, she joined the Haganah Science Corps under the command of Prof. Aharon Katzir, where she met her husband, Abraham Kedem.

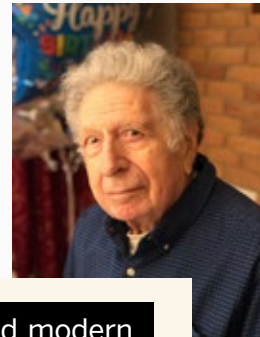
In the late 1940s, she completed her doctoral studies at Weizmann under Prof. Katzir and later joined the faculty. Together, she and Prof. Katzir developed theoretical models that reshaped the understanding of transport phenomena in biological and synthetic membranes. Their findings earned them the 1961 Israel Prize in Life Sciences, and the Kedem–Katchalsky and Kedem–Spiegler models remain foundational to the field.

Prof. Kedem was also instrumental in advancing desalination and water-treatment technologies that have benefited communities in Israel and around the world. She later founded Weizmann's Membrane Research Department (now the Department of Biomolecular Sciences) and helped establish the Desalination and Water Treatment Department at Ben-Gurion University of the Negev.

"Ora was a woman of integrity who genuinely cared about people and was passionate about her work," recalls departmental colleague Prof. *Emeritus* Michael Eisenbach. "Her mind worked so quickly that she would often move on to another topic before finishing her sentence."

A scientist, leader, and innovator, Prof. Kedem leaves a legacy that continues to shape both fundamental research and practical solutions to some of the world's most pressing challenges.

Prof. Ari Ben-Menahem



Prof. Ari Ben-Menahem pioneered modern seismology and geophysics

Prof. *Emeritus* Ari Ben-Menahem, a founding figure of modern seismology and a longtime faculty member of the Weizmann Institute, passed away in April 2026 at the age of 97. Over a career spanning more than six decades, he helped establish the mathematical foundations of earthquake physics and advanced Israel's role in geophysical research worldwide.

Born in Berlin in 1928, Prof. Ben-Menahem studied mathematics and physics at the Hebrew University of Jerusalem in the 1950s before continuing his doctoral and postdoctoral studies at Caltech.

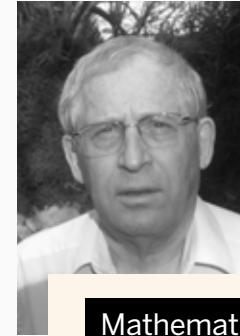
He joined Weizmann in 1964 as a professor of mathematics and geophysics. Through decades of research, teaching, and scientific leadership, he helped transform seismology from a largely observational discipline into a quantitative science grounded in mathematical physics.

"He had a rare ability to translate physical problems into mathematical language," recalls Prof. M. Nafi Toksöz, a colleague from MIT. "For example, he demonstrated that earthquakes were not just single points underground, but massive ruptures spreading through the Earth's crust."

Prof. Ben-Menahem coauthored the influential book *Seismic Waves and Sources* (1981) and wrote the 6,000-page *Historical Encyclopedia of Natural and Mathematical Sciences* (2009). He also helped build Israel's early geophysical research infrastructure, including as Chief Seismologist, and trained generations of students who went on to lead the field in Israel and abroad.

Weizmann Prof. *Emeritus* Yakar Kannai describes Prof. Ben-Menahem as "one of the last 'classical' applied mathematicians" who "emphasized human insight over computation," adding that Prof. Ben-Menachem "was a person of high standards, and insisted on recruitment of only top-class scientists to the Institute."

"The entire scientific community will miss his brilliance," says Prof. Toksöz.



Prof. Zvi Artstein

Mathematician Prof. Zvi Artstein seamlessly bridged research, education, and the real world

Prof. *Emeritus* Zvi Artstein, a distinguished mathematician and educator, passed away in October 2025 at the age of 82. Prof. Artstein joined the Weizmann Institute in 1975 and, for over five decades, helped shape both its mathematical research and the fabric of its academic life.

Born in Tel Aviv in 1943, he earned his BSc from the Hebrew University of Jerusalem and pursued graduate studies there under Nobel laureate Robert J. Aumann. Following a postdoctoral appointment at Brown University, he joined Weizmann's Department of Theoretical Mathematics.

Prof. Artstein's work encompassed both pure and applied mathematics, with major contributions to the study of dynamical systems, control theory, and decision-making under uncertainty. Several influential ideas bear his name, including the "Artstein reduction," a fundamental method in control theory which became a standard tool in fields ranging from engineering and industrial processes to economics and biological modeling.

He also served in leadership roles including as Dean of the Faculty of Mathematics and Computer Science, Chair of the Council of Professors, and Vice President for Technology Transfer. From 2001 until his passing, he sat on the International Board.

Prof. Artstein cared deeply about mathematics education and the ways in which it shapes how we engage with the world. In his popular book *Mathematics and the Real World: The Remarkable Role of Evolution in the Making of Mathematics* (2014), he explored how our evolutionary makeup is both a help and a hindrance to the study of math.

His daughter, Shiri Artstein-Avidan, a math professor at Tel Aviv University, recalls the games and puzzles he used to play with her and her siblings, and later with his grandchildren: "His love of the endlessly rich world of mathematics helped inspire my own passion for mathematical thinking and pursuit of the field."

Prof. Yitzhak Frishman



Theoretical physicist Prof. Yitzhak Frishman devoted decades to the pursuit of knowledge

Prof. *Emeritus* Yitzhak Frishman, a longtime member of the Department of Particle Physics and Astrophysics, died in December 2025. He was 87.

Born in Poland in 1938, Yitzhak Frishman immigrated to Israel in 1949 and settled with his family in Azor. He served in the IDF Artillery Corps, including during the 1956 Sinai Campaign and 1973 Yom Kippur War. He earned his BSc and MSc at the Hebrew University of Jerusalem, followed by a PhD in particle physics at the Weizmann Institute, under Prof. Amnon Katz, and postdoctoral positions at Stanford and Princeton.

He joined the Weizmann faculty in 1969, becoming a full professor in 1976 and holding the Amos de-Shalit Chair of Theoretical Physics from 1979 until his retirement in 2008. He also served as a visiting professor at CERN, Caltech, and the Max Planck Institute.

Prof. Frishman's research centered on non-abelian gauge theories and quantum field theory, contributing to the theoretical foundations that earned a group of North American scientists the 1990 Nobel Prize in Physics. He partnered with Prof. Jacob Sonnenschein to write *Non-Perturbative Field Theory* (2010), used to train theoretical physicists worldwide, and earned various recognitions during his career, including the 1972 Landau Prize from the Israel National Lottery.

Colleagues remember him as a man of sharp intelligence and curiosity. "Yitzhak's intellectual depth, encyclopedic knowledge of the field, originality, and creativity made him a leading member of our department, setting an academic standard for generations to come," shares Weizmann Prof. *Emeritus* Adam Schwimmer.

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Hosted by Prof. Roei Ozeri, *The Sound of Science* explores a single topic through multiple scientific lenses. Season one, “Future Feasts,” examines the future of food—from genetics and evolution to microbiomes and cultivated meat—revealing the research shaping what we eat.



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