

TECHNION USA



How the Technion Is Pioneering the Future of Zero- Emission Air Travel

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Pictured on cover / Assistant Professor Joseph Lefkowitz (l), head of the Combustion and Diagnostics Laboratory, and Associate Professor Dan Michaels (r), head of the Propulsion and Combustion Lab in the Sylvia and David I.A. Fine Rocket Propulsion Center in the Technion Faculty of Aerospace Engineering

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Letters From ATS Leadership

As we prepare for the Technion’s Centennial anniversary, I wonder if the first class in 1924 could have had even an inkling of the advanced research we’re celebrating in just this *Technion USA* issue alone.

This year saw the Technion launch initiatives that will proudly maintain the University’s preeminent role as a leader in both medical and environmental issues: the Technion Human Health Initiative and the Stewart and Lynda Resnick Sustainability Center. We are grateful to our wonderfully generous American Technion Society supporters who helped make these programs and others a reality.

We were thrilled to help the Technion create the Faculty Ambassador Program, which prepares faculty to meet with

supporters. From the brilliant researchers in Haifa to our committed friends in the U.S., we are truly one Technion family.

As CEO, I have had the privilege of seeing Technion alumni recognized with distinguished honors, like when Dr. Eliad Peretz ’13 received NASA’s Exceptional Achievement Medal in exhilarating celebrations this past spring. In another milestone event that speaks to the University’s preeminence worldwide, former Israeli Prime Minister Naftali Bennett spoke during our Miami Board of Directors meeting. We have passed the leadership baton from Steve Berger to incoming ATS National President Mark Gaines. I look forward to working with him in the Centennial year and beyond.

Michael Waxman-Lenz

I am writing shortly after returning from the Technion Board of Governors meeting in Haifa. It was wonderful being on campus, absorbing the energy from the students and activities, reconnecting with old friends and making new ones. Now I am more excited than ever to step up to my new role.

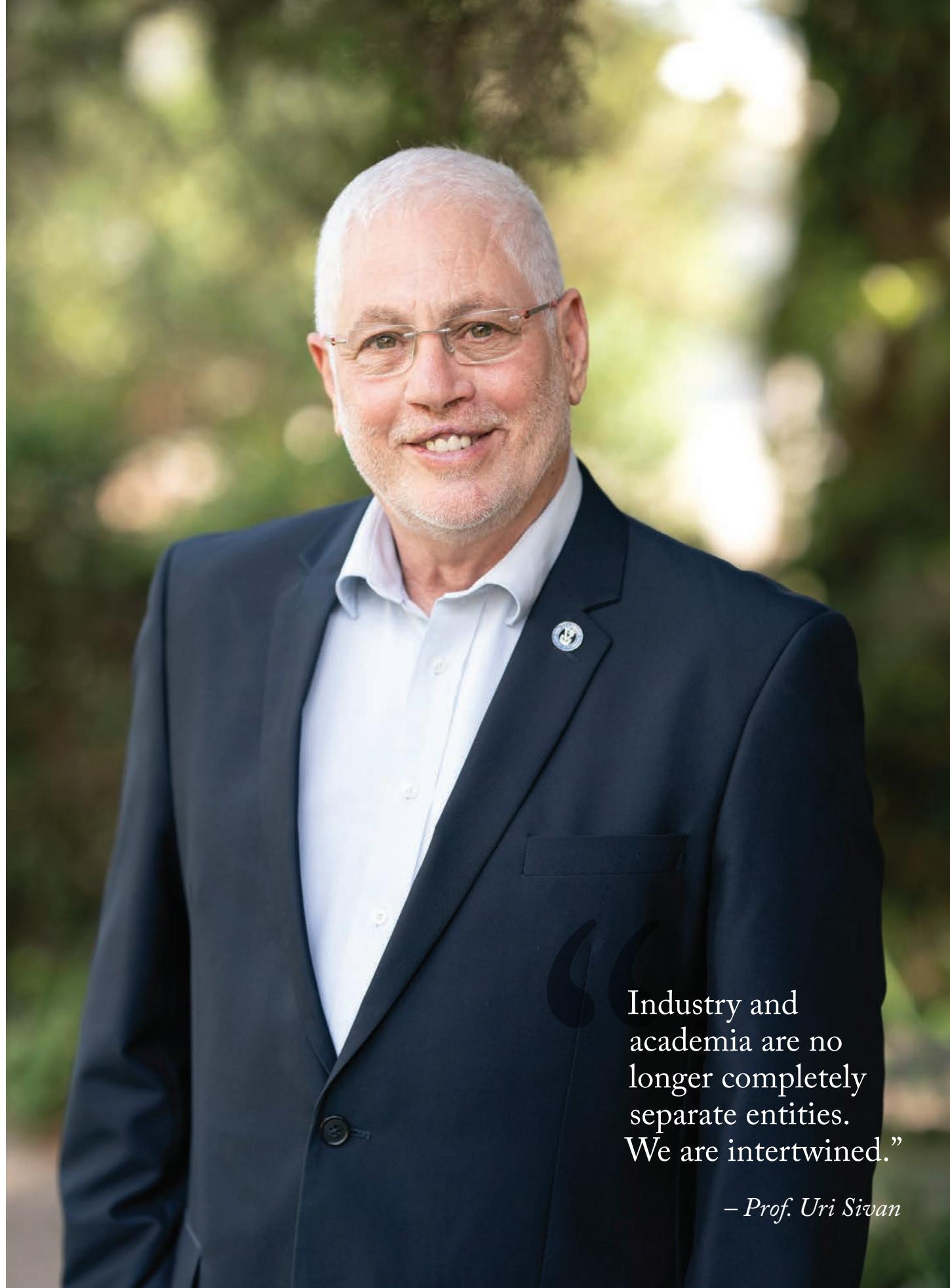
I’m still working on my goals as president, but know they will center around the partnership between the ATS lay leadership, our professionals nationally and locally, and collaboration with the Technion to further our synergistic relationship.

As ATS board members, we are responsible for helping make the ATS as

successful as possible in its support of the Technion. In this way, the Technion and its brilliant scientists can continue to develop groundbreaking research that has made such an impact not just on Israel but on humanity. Please read about some of their amazing work — ranging from sustainable aerospace engineering to using AI in cancer diagnosis — in this issue of *Technion USA*.

I look forward to collaborating with all of you for continued success — and hope that you join us for our special 2024 Centennial Mission to the Technion and other areas of Israel in early March. Details are forthcoming. What an exciting time to be part of the ATS and the Technion!

Mark Gaines



“
Industry and
academia are no
longer completely
separate entities.
We are intertwined.”

— Prof. Uri Sivan

Looking Ahead

Professor Uri Sivan will begin his second term as Technion President in October 2023. In spite of the COVID-19 pandemic and ensuing instability that marked his first term, he nonetheless achieved objectives to ensure the Technion's continued growth and advancement. In this Q&A, he recaps highlights of his tenure to date and looks at what's up next.

■ **What were some of the highlights of your first term?**

President Uri Sivan: During these challenging years we have established or are setting up no less than 12 research centers; repositioned the Technion in the changing academic-industry ecosystem; reformed some of our teaching approaches; extended community outreach programs; recruited the best researchers; won a record number of ERC grants and prizes; and attained even higher standings in prestigious global rankings.

On the human health front: We set up the Center for Clinical Skills in the Rappaport Faculty of Medicine to position our medical training at the forefront of patient-oriented treatment, established the Wolfe Center for Engineering and Medicine in Collaboration with Rambam, and recently opened the May-Blum-Dahl Human MRI Research Center. In computer science: We established the Tech-

AI Hub, which will serve as the beating heart of all the campus' AI activities. We launched the Zimin Institute for AI Solutions in Healthcare to support commercialization of advanced applied healthcare research. And construction is expected to begin on the Martin and Grace Druan Rosman High-Performance Computer Data Center. Fostering entrepreneurship: We recently completed the Mehoudar Center for Inventors, which will encourage innovators from all over Israel, from school children to university students and faculty members, to realize creative engineering designs. And to dream and imagine. On the sustainability front, we are launching the Stewart and Lynda Resnick Center Center for Sustainability and Catalysis.

■ **Can you discuss your plans for cultivating collaboration between the Technion and industry?**

We are encouraging firms to move their R&D centers to our campus — and have met success. PTC, the multifaceted software giant with roots in computer-aided design applications, recently moved its center and 100 researchers to the Gutwirth Industrial Park on campus. Other recent collaborations include agreements with Verily, the research arm of Alphabet Inc.; Intel Corp.; Pfizer; the renewable energy firm Doral Group; and more.

To further foster collaboration between academia and industry, we created research fellowships that help integrate scientists from the private sector into research, teaching, and mentoring students. The Research Fellow from Industry spends one day a week at the Technion, taking part in academic activities. Some 35 researchers have already joined the ranks of the Technion via this path.

The Technion has also invested substantial resources to improve the commercialization process of ideas developed by the University's innovators. As a result, 15 new companies opened last year, triple the average number of startups annually three years ago.

■ What initiatives have you instituted for Technion students — the soul of the University and promise of the future?

We have upgraded teaching labs, bolstered the Center for Promoting Learning and Teaching, opened a studio for digital teaching, developed the Schulich Leaders Entrepreneurship Program for outstanding undergraduates, and promoted tech entrepreneurship and innovation education through various programs. We also inaugurated the Broshim Dormitory, are renovating other student dorms, and began designing a state-of-the-art building for aerospace engineering and a new building for computer science.

Striving to produce well-rounded students, we are upgrading the Department of Humanities and Arts, are expanding the presence of artists and art on campus, and launched the Sonia Marschak Artist in Residence program to foster dialogue between the arts and the sciences. Lastly, we are expanding emotional and psychological support services with the opening of the Fischer Center for Reservists and Students with Learning Disabilities and the Soft-Landing program and math summer camp to help first years adjust to academic life.

■ The Technion is well-positioned to tackle the challenges of the 21st century with a multidisciplinary approach. How are you building on the University's strengths?

The University has experts in many fields, including engineering, science, medicine, architecture, and education. To maximize this advantage, we have constructed an innovative model, the "Technion-Wide Frontier," which brings together a spectrum of relevant stakeholders. Two such frontiers have already been created: one for human health and one for sustainability. Each embraces a variety of academic departments that benefit from managerial support to conduct multidisciplinary ideation, establish joint research projects, develop pedagogy, and other initiatives.

Based on my experience in establishing the Russell Berrie Nanotechnology Institute at the Technion, I knew it was essential to connect both researchers and academic departments. Nonetheless, it took some trial and error to devise a model most suitable for dealing with large-scale multi-disciplinary challenges. To date, 16 academic departments have already joined the Human Health Frontier. Building on the lessons we learned from that pilot, we recently launched the Sustainability Frontier and are planning to establish a third Frontier focusing on engineering.

■ How will the Technion continue to attract and maintain the best and brightest faculty in our increasingly competitive academic environment?

The Technion launched a series of initiatives to improve faculty support, including a pilot program to reduce the time needed to set up new laboratories. We have streamlined the promotion process and set up a fund with our profits from commercialization to help provide researchers with cutting-edge facilities. We have raised significant funds to establish the Crown Vanguard Award for Science and Technology, which grants leading mid-career researchers the resources to launch new research directions. And we established the Campus Leaders Program to cultivate managerial leadership among faculty and administrative staff.



I am especially proud of our efforts and success in increasing the representation of women in the faculty and academic management positions, including the creation of a new position: VP for Diversity and Inclusion.

■ Can you discuss priorities for your second term and its convergence with the Technion Centennial Anniversary?

As we prepare to celebrate the Technion's 100th anniversary and as I look ahead to my next term, I hope to promote additional transformative projects that will enable our University to enter its second century with confidence, certainty, and determination.

We are building the André Cohen Deloro Institute for Transformative Biomedical Sciences and Engineering, which will house 28 state-of-the-art labs for all disciplines, and the Wolfe Center for Translational Medicine and Engineering. Collaborating with Rambam Health Care

Campus, the Wolfe Center will combine engineering and medical research to foster innovative technologies.

Maintaining our leadership in sustainability and environmental issues, the Technion is constructing the Resnick Sustainability Center for Catalysis, focused on finding ways to maintain global growth while confronting the climate crisis. These efforts will get a boost from the Carasso FoodTech Innovation Center and from the Technion Sustainable Protein Research Center, aimed at becoming a hub for fundamental and applied research in alternative food. We also plan to establish a research center for simulated cities, to help cities become more adaptable to social, economic, and environmental change.

The Technion has played a vital role in transforming Israel into an epicenter of global innovation while achieving preeminent status in STEM academia worldwide — and will continue to do so. ■

Nourishing Food Tech Research

A new collaboration to scale the best ideas in the field of sustainable proteins

An estimated 1.3 billion people worldwide were expected to go hungry in 2022, according to the U.S. Department of Agriculture — an increase of 10% over the prior year.

Imagine juicy burgers sizzling on the grill, made from beef cells without environmental impact or harm to animals. Or cookies that release nutritious protein as they rise in the oven. Teaming up with the nonprofit think tank the Good Food Institute in Israel, the Technion is establishing the Sustainable Protein Research Center (SPRC) to conduct research to develop and help commercialize forward-looking food technologies like these. Professor Yoav Livney, who helped Technion students create the prizewinning “Algalafel,” a falafel enriched with the microalgae spirulina, is leading the endeavor.

At a time when the world is battling the dual challenges of feeding a rapidly growing population while addressing climate change, the SPRC’s work is needed more than ever. Current food systems cause more than a third of global greenhouse gas emissions. At the same time, food insecurity is a worsening problem. An estimated 1.3 billion people worldwide were expected to go hungry in 2022, according to the U.S. Department of Agriculture — an increase of 10% over the prior year.

The first of its kind in the world, the new center hopes to become a hub for sustainable food technologies in Israel, and

the go-to institute for training the next generation of industry researchers and startup innovators. Borrowing the best minds from the Technion’s 18 academic faculties, the multidisciplinary SPRC intends to create protein substitutes for meat, fish, eggs, milk, and other products, while also advancing technologies in plant-based, fermentation-based, and cell culture-based solutions.

The SPRC’s five-year budget of \$20 million will help put these innovative projects on the front burner, recruit new faculty, and support the construction of a new building for the Carasso FoodTech Innovation Center, where a large part of the SPRC’s research will take place. This new building, located next to the Faculty of Biotechnology and Food Engineering, will feature a semi-industrial R&D production facility, labs for cultivated meat and fermentation technologies, and an educational R&D kitchen.

Given the need to quickly amplify well-grounded solutions, the SPRC will tackle two big challenges faced by the food tech community: a lack of basic research that slows progress and inadequate traction for industry startups. Doing so could help pave the way for startups to follow in the

footsteps of Technion-connected Aleph Farms. The cultivated meat startup based on the research of Technion Professor Shulamit Levenberg is on the fast track to bring its product to market. Pending regulatory approval, the company plans to launch the world’s first halal-certified facility to produce its engineered thin-cut steak in Singapore, while also targeting a commercial rollout in Israel.

Other Technion-born food technologies are helping Israel become a global leader in the field. Professor Marcelle Machluf, an expert in tissue engineering and nanotechnology, recently launched Meatafora, which has already produced ground beef and sausages by growing animal cells on edible, plant-based scaffolds. And Technion students are continually recognized in international food tech competitions. Most recently, student teams took home the gold and silver medals in an international competition to develop healthy junk food. The prizewinners were a freeze-dried, tofu-based omelet, and a protein snack made from chickpeas, lentils, and cashews.

Given the high stakes involved, the appetizing work comes not a minute too soon. ■



The Future of Zero-Emission Air Travel

A decade from now, travelers could be flying in a jet that emits no carbon into the atmosphere. The fuel powering that aircraft may have its origins in the Technion's Faculty of Aerospace Engineering.

Technion researchers are working on a variety of projects to develop alternative jet fuels derived from ammonia and hydrogen. While considerable barriers remain, both substances — when produced cleanly with renewable power — have the potential to run jet engines as well as gas turbines to generate carbon-free electricity.

"If you want to live in a world where we reduce the carbon dioxide in the air as quickly as possible, you need to use zero-carbon fuels," said Assistant Professor Joseph Lefkowitz, who is leading the Technion's research into ammonia. "Long-term," he continued, "zero-carbon fuel made from hydrogen or ammonia is better for the planet."

Researchers in the U.S. and Europe are developing sustainable aviation fuel (SAF) made from used cooking oil, agricultural waste, captured CO₂, or a variety of other waste carbon streams. Because SAF can often be blended with fossil fuel-derived kerosene, it can be used in conventional aircrafts, much as ethanol is mixed with gasoline.

In February, United Airlines and other big-name aerospace and financial companies, including Boeing and JPMorgan Chase, launched a \$100 million venture fund to invest in SAF. Most types of SAF are "carbon-neutral," meaning they neither increase nor reduce the CO₂ in the environment. Technion researchers are taking these efforts in sustainability a step further.

Since air travel currently contributes just 2% annually to global warming, the focus at the Technion is on a truly zero-carbon fuel solution that would have applications beyond the aerospace industry, including in power plants.

Hydrogen-based fuel would provide

such a solution, and "would have a huge impact on the total amount of carbon we're emitting," said Prof. Lefkowitz. He is working together with Aerospace Faculty Associate Professor Beni Cukurel, funded by a grant from Israel's Ministry of Energy, to develop a process that

would use ammonia — which consists of hydrogen and nitrogen — as a hydrogen carrier for renewable energy storage and power generation. Using ammonia would potentially overcome the obstacles of employing hydrogen alone.

Due to hydrogen's low energy density, it takes a great deal of storage space to contain enough hydrogen

to power an aircraft. It is also highly flammable. "The problem becomes, how do you store hydrogen in aircraft?" said Prof. Cukurel. "If there were a leak, it would just burn like the Hindenburg in 1937."

Ammonia, widely used in the synthesis of fertilizers, has a host of advantages. As the world's second-most-produced synthetic chemical, it is both ubiquitous and inexpensive, reducing the cost of delivery and storage by more than 10 times over compressed hydrogen. It does not release carbon dioxide when it combusts, and it can potentially be used directly in engines or be converted back into hydrogen at the point of use.

While ammonia presents challenges, including a propensity to produce nitric oxide pollutants when burned, its energy density, though lower than conventional jet fuel, is higher than batteries or hydrogen.

A third member of the Faculty, Associate Professor Dan Michaels, is working on a project that could eventually be applied to the jet fuel challenge. Funded by the Israel Electric Corporation, he is developing a gas turbine for electrical power plants that can use many different fuels, including hydrogen. If Prof. Michaels can solve the problem on the ground, his solution could be applied to aircrafts. Manufacturers

like Boeing and Pratt & Whitney are seriously discussing hydrogen power for aerospace. "Hopefully my research will help them know what to invest in," said Prof. Michaels.

Beyond the Faculty of Aerospace Engineering, members of the Wolfson Department of Chemical Engineering at the Technion are in early discussions with Boeing to fund a Technion effort to develop sustainable aviation fuels from hydrogen or methane.

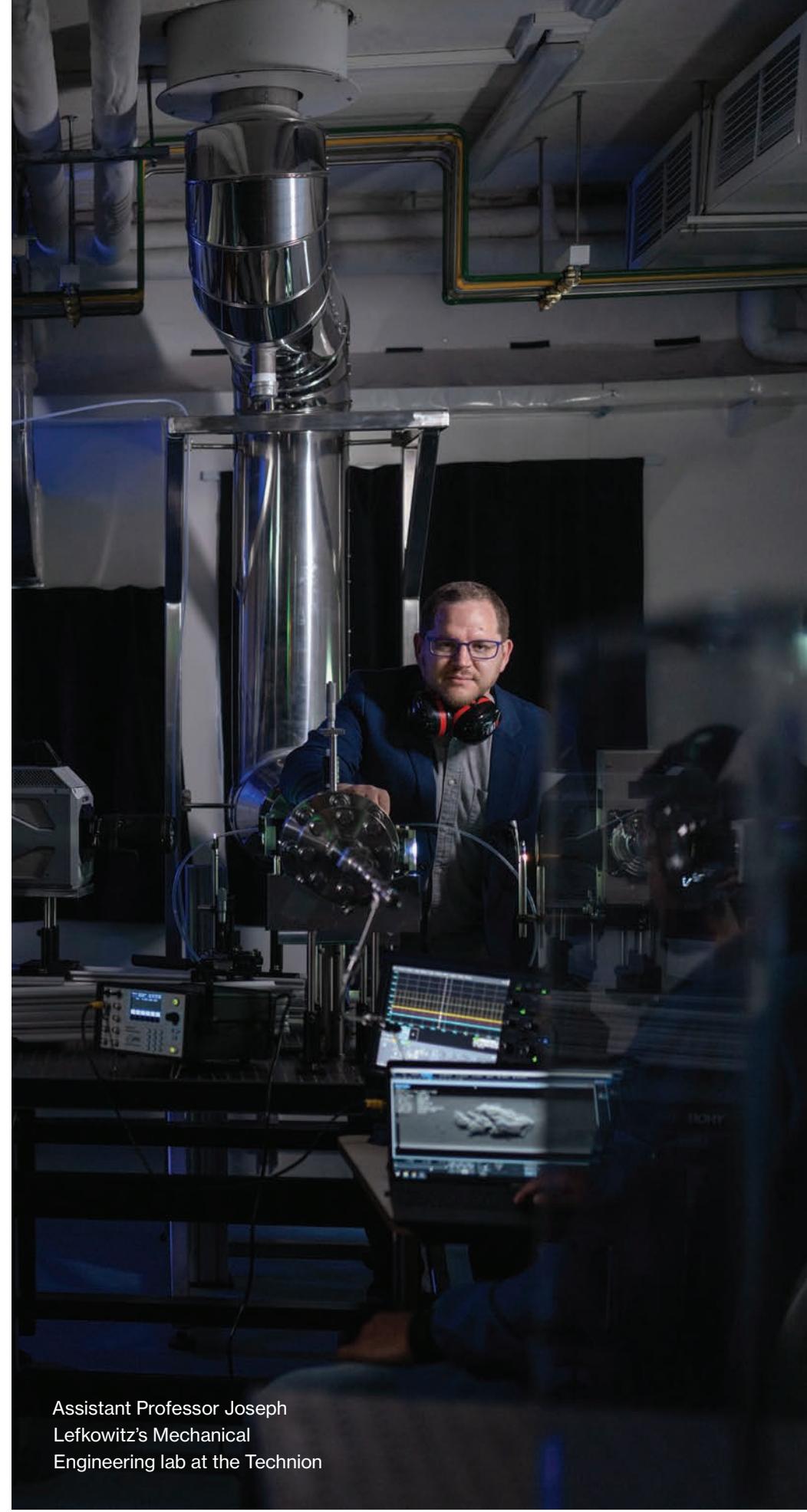
Prof. Lefkowitz said that he and his multidisciplinary Technion colleagues are aiming high in their work on sustainable jet fuel. But he thinks their projects will take at least 20 years to come to market. Prof. Cukurel is more optimistic: "I believe we can bridge this challenge not in 20 years, but in 10," he said.

"At the Technion in the last four to five years, there has been a broad range of activity toward sustainability."

— Prof. Beni Cukurel

As Israel's only faculty of aerospace engineering, the Technion is accustomed to anticipating and fulfilling needs that arise in this area. "Ammonia is the best candidate we have in terms of decarbonizing energy and transportation," said Prof. Lefkowitz. "We're working on long-term solutions to the climate crisis."

Prof. Cukurel agrees and said, "At the Technion in the last four to five years, there has been a broad range of activity toward sustainability. I'm very excited about it." ■



Assistant Professor Joseph Lefkowitz's Mechanical Engineering lab at the Technion

Technion Students: A League of Their Own

“You can have amazing science, but what does it accomplish if you can’t apply it? We are doing science that we can take to industry, implement quickly in real life, and help growers around the world.”

— Aviram Avital

Maya Goldshlager served the Israeli Air Force with distinction, providing instruction on operating the Iron Dome defense system. Her contribution felt so meaningful, she said, “it led me to choose a degree that would combine science and technology to impact people’s lives.”

As an undergraduate in the Faculty of Biomedical Engineering at the Technion, Ms. Goldshlager is already making waves.

Participating in her faculty’s hackathon, a competition to find solutions to real-life problems, Ms. Goldshlager created prototypes of two new medical tools: one to treat multiple sclerosis (MS) and the other for urinary tract infections (UTIs). “It was a great experience,” she said, from the earliest stages of brainstorming with other students to research and then creation. “I had the chance to come up with a solution to major health challenge problems we see every day.”

Ms. Goldshlager was one of eight Ilene & Steve Berger Technion Visiting Fellows to meet with American Technion Society (ATS) supporters in the U.S. this past year. Selected for their academic excellence and well-rounded personalities, these students are the soul of the Technion and the future of Israel.

Born in Tel Aviv, Ms. Goldshlager graduated high school with an excellency diploma while simultaneously studying physics at a special science education center. She was active in the scouting movement, which is an integral part of Israeli society — first as a member, then as an instructor,

and finally as head of the instructors. On deciding to pursue biomedical engineering, she said, “It was crystal clear to me that I was going to learn at the Technion. It’s the best institute in Israel, and it motivates me every day to give 100%.”

Specializing in signal analysis and biomechanics and fluids, Ms. Goldshlager is currently focused on a project that diagnoses dementia in elderly people based on the sound of their voice. She and her team gather datasets from patients at nearby Rambam Hospital for analysis, then build algorithms that detect dementia symptoms. “The initial diagnosis of dementia is very important because the patient can receive better treatment if the disease is found in the early stages. This is a small, first step,” Ms. Goldshlager said, but she hopes to continue the research and eventually create a generic tool that benefits patients and doctors.

When she’s not in the lab, Ms. Goldshlager works in the David and Janet Polak Visitor Center at the Technion and mentors biomedical students who are struggling to acclimate to their first year. She also takes dance classes and uses the Technion’s recreational facilities to jog, swim, and recharge.

It has not always been easy being a woman in STEM. But the Technion gets high marks, as more than 48% of incoming students are women. “The Technion gives all students an opportunity to become the best they can be regardless of their gender or where they are coming from,” Ms. Goldshlager explained.



Maya Goldshlager



Aviram Avital '18, M.S. '20

One such student is Aviram Avital '18, M.S. '20, the first in his family to pursue higher education. His parents immigrated to Israel from Morocco, settling in the “periphery” town of Kiryat Bialik. His father dropped out of high school at the age of 15 and worked as a car mechanic, while his mother was a bank teller.

Mr. Avital too might have missed out on an education had it not been for the generosity of ATS supporters. “When I was an undergraduate student, my mom couldn’t pay my tuition, and I needed to get involved back home to help financially,” Mr. Avital said while touring in New York as a Berger Fellow. “One of the reasons I’m here is to thank ATS donors, to make sure that future generations of students with financial difficulties can get the same help I did.”

Today, he is pursuing both a doctorate in the Wolfson Department of Chemical Engineering and a Technion MBA. Working with Associate Professor Avi Schroeder in the Louis Family Laboratory

for Targeted Drug Delivery & Personalized Medicine, Mr. Avital’s research repurposes nanoscale drug delivery systems developed for cancer to combat viral diseases in agriculture. Likening his work to aerospace, he offers this analogy: “Astronauts have a mission in space but need a proper spaceship to get there. I develop the spaceship for biological molecules to penetrate the plant, distribute within it, and reach the infected cells to fight the virus without harming the plant itself.”

Such solutions do not currently exist, and farmers regularly face huge economic losses. “When we look at the climate crisis, we see that food shortages will be a big problem for humankind,” he said. “Our delivery system can increase crop yield and help ensure food security.”

Mr. Avital served in the Israel Defense Forces’ Armored Corps, reaching the rank of first sergeant, and remains in active reserve duty. Like Ms. Goldshlager, he set his sights on the Technion “because I wanted to become an engineer and have

an impact on the world,” he said. “What better place is there to learn engineering than the Technion?”

He made the Dean’s List throughout his undergraduate years and received numerous awards and scholarships. In finding work-life balance, Mr. Avital carves out time to travel, hike, and watch professional basketball. He is a role model for students at his hometown high school, where he often returns to speak about the importance of an academic education.

Though his career is still young, Mr. Avital’s research is gaining traction. Local Israeli wineries are interested in his technology, and he and a team of scientists are awaiting approval on a U.S. patent application in the field of nanoparticles and agriculture. “You can have amazing science, but what does it accomplish if you can’t apply it?” he said. “We are doing science that we can take to industry, implement quickly in real life, and help growers around the world.”

Looking ahead, Mr. Avital hopes to lead a biotech company in Israel. ■



When clinical pathologists look at images of cells from a patient biopsy, they perceive things the rest of us cannot. Where we see bright pink blobs and dots of purplish blue, they can make out the hallmarks of cancerous disease. But show the same images to a computer souped up with artificial intelligence in Professor Ron Kimmel's Geometric Image Processing Lab at the Technion, and it can discern data that is invisible even to the most highly trained human eye.

The Technion is the top-ranked institution for machine learning in Europe and the Middle East. Prof. Kimmel's group is investigating how trainable computer models can make cancer diagnosis swifter and more accurate. In March, *The New York Times* called this research area "one of the most tangible signs to date of how machine learning can improve public health."

Between the time a cancer patient is tested and receives a diagnosis, samples of the tissues must be analyzed by a pathologist. "It is a common bottleneck in the patient journey," Prof. Kimmel said, "but it doesn't have to be." With the machine-learning technology his lab is developing, computers would be able to scan biopsy images that might otherwise pile up in

a pathologist's inbox. The software can determine whether cells are cancerous with human-level accuracy or better. What's more, the system could eliminate additional costly and time-consuming steps clinicians must take to further analyze tumor types — time some patients can't spare. "This is the magic," Prof. Kimmel said.

Today, pathologists use a simple process called hematoxylin and eosin (H&E) staining to look at biopsied cells. Once they identify malignancies, they must do additional chemical tests to seek out specific biological markers that indicate the subtype of cancer they're dealing with. Those findings often drive treatment decisions. Prof. Kimmel's team, which includes Dr. Gil Shamai and Amir Livne and a squad of 20 computer scientists, set out to build an AI model that could diagnose malignancy and determine its subtype simultaneously using just routine scans. "The ultimate goal would be to predict the treatment from the H&E images," Dr. Shamai said, and get patients on the fast track to treatment.

Their latest research focuses on the area of immunotherapy, which directs the body's own immune system to attack malignant cells. Studies have found that immunotherapy can significantly improve

survival time for patients with certain cancers such as lung cancer and melanoma, and potentially for breast cancer. However, the treatment is only effective against cancers that display the protein PD-L1. Now, identifying whether a cancer has the protein requires chemical testing — but Prof. Kimmel's group found a way to skip that step.

Their findings, published in *Nature Communications* in November 2022, demonstrated that their system detected special image/morphological features in the biopsies of 70% of patients in the study. Based on those features, the system could predict the presence of PD-L1 with 100% accuracy. The remaining 30% of cases were inconclusive.

In a single biopsy slide, the computer recognized key biological signatures that are indistinguishable to the human eye. "We and the pathologists do not know how the computer does that," said Dr. Shamai. "They cannot replicate it — yet."

Prof. Kimmel added, "We do not yet know what the computer is seeing. But whatever it is, it could change the way the future looks for cancer doctors and their patients." ■

Magic Eye

Computer vision offers a brighter outlook for diagnosing cancer

Prof. Kimmel's research is said to be "**one of the most tangible signs to date of how machine learning can improve public health.**"

— The New York Times

Technion Innovations



Growing Meat Without Harming Animals

Developed by Professor Marcelle Machluf

Food tech startup Meatafora uses an edible, plant-based scaffold to grow meat directly from cow cells in a scalable, affordable, and sustainable process without harming animals.

Photo Credit: Adobe Stock

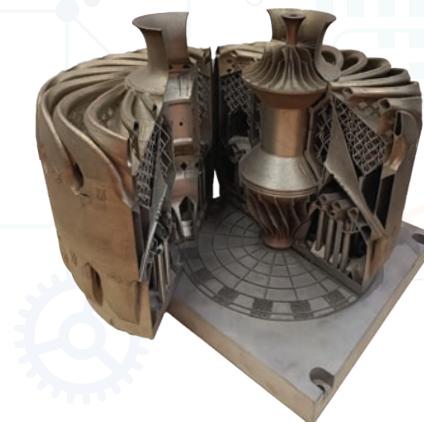


AI Diagnoses Breast Cancer More Accurately than Doctors

Developed by a team, including Technion Professor Ron Kimmel, Dr. Gil Shamai, and Amir Livne

This neural network detects breast cancer and determines the tumor subtype accurately and rapidly using routine scans.

Photo Credit: Adobe Stock



3D-Printed Jet Engine

Developed by Associate Professor Beni Cukurel, Dr. Ronen Ben-Horin, and PTC

This breakthrough, the first-ever micro turbojet engine 3D printed in one piece, could have applications for aerospace engineering and other industries across the board.

Photo Credit: Technion / Beni Cukurel



Personalized Antidepressants

Developed by Genetika+, led by alumna, co-founder, and CEO Daphna Laifenfeld, Ph.D. '03

A patient's blood sample is used to create a "brain in a dish" comprised of neurons that are exposed to 70 different antidepressants to find the most effective treatment.

Photo Credit: Adobe Stock



Protecting Our Crops

Developed by Professors Boaz Pokroy and Ester Segal

Inspired by the natural wax on lotus and broccoli plants, Safewax is a biodegradable, nontoxic, anti-adhesive crop spray that can be used on any plant to organically prevent disease-bearing pathogens.

Photo Credit: Adobe Stock



Oxygen-Boosting Device

Developed by Inspira Technologies, led by alumna and CTO Daniella Yeheskely-Hayon '00, M.S. '02, Ph.D. '09

This system raises the blood's oxygen saturation level to 95% in 60 seconds, reducing the need for ventilators — a lifesaver for COVID-19 patients.

Photo Credit: Inspira / inspira-technologies.com



Device Can Prevent Open Heart Surgery

Developed by Cuspa Medical founder Professor Yair Field and alumnus CEO Ariel Weigler '15, M.S. '19

Placed during a minimally invasive catheter procedure, the Cusper™ holds heart valves at their original size and ensures they close properly.

Photo Credit: Adobe Stock



Wearable Anxiety Reducer

Developed by Jacobs Technion-Cornell Institute researchers, led by Prof. Tanzeem Choudhury

This wearable device simulates affective touch by repeatedly brushing synthetic fur across the wearer's arm, lowering their perceived stress and anxiety levels.

Photo Credit: Yiran Zhao, Jacobs Institute Ph.D. Candidate



Healthy Processed Food

Developed by Technion students for a competition to make nutritious fast food

Prizewinning creations included OmeleTofu, an instant, freeze-dried omelet (just add water), and Proteinchick, a gluten-free vegan snack made of protein-rich cashews, chickpeas, and lentils.

Photo Credit: Caroline Hali



Baseball Hat Attachment Wards Off COVID

Developed by Professors Moshe Shoham and David Greenblatt

Researchers developed a small air-pressure device worn on the bill of a baseball cap, which uses an "air screen" to protect wearers and peers from COVID-19 and other viruses.

Photo Credit: Wisdome Wearables

Imagine this: One day you wake up to find the steering wheel that had been on one car in your garage is now on your other car, and the parking brakes are also interchanged. According to research conducted by Professor Noam Ziv, something very similar is happening in our brains, because the parts that make up our synapses are constantly moving.

This brain research, which could have implications for memory loss and aging, is just one of the many exciting projects underway in the new Technion Human Health Initiative (THHI), headed by Prof. Ziv.

As the global population skews older, aging-related diseases are more prevalent and complicated, requiring an integrative approach to problem-solving. The THHI focuses on healthy aging from childhood through the golden years, with a multidisciplinary approach that combines researchers from all 18 Technion faculties with clinicians at Technion-affiliated hospitals and industry partners.

"Rather than telling our investigators what they should be doing, we bring them together, and the magic is guaranteed to happen," said Prof. Ziv, whose own eclectic interests range from neurobiology to automated imaging.

Explaining his research, Prof. Ziv said the synapses, or connections between brain cells, comprise proteins that are in perpetual motion. Given that the synapses control the encoding of memories, he and his team are exploring how such instability might affect memory and forgetfulness. Their research could shed valuable light on the onset of age-related

Aging Research That Never Grows Old

neurodegenerative diseases, such as Alzheimer's, as we age.

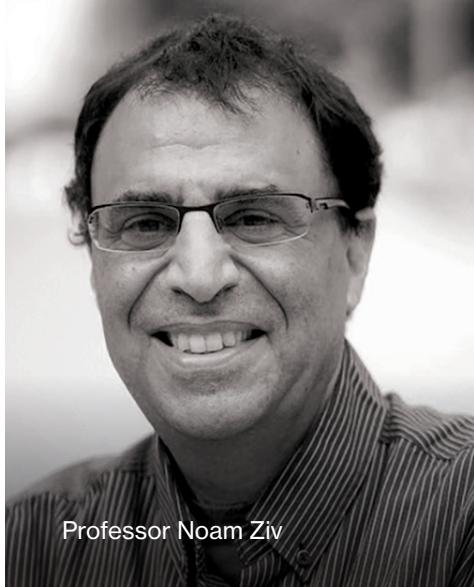
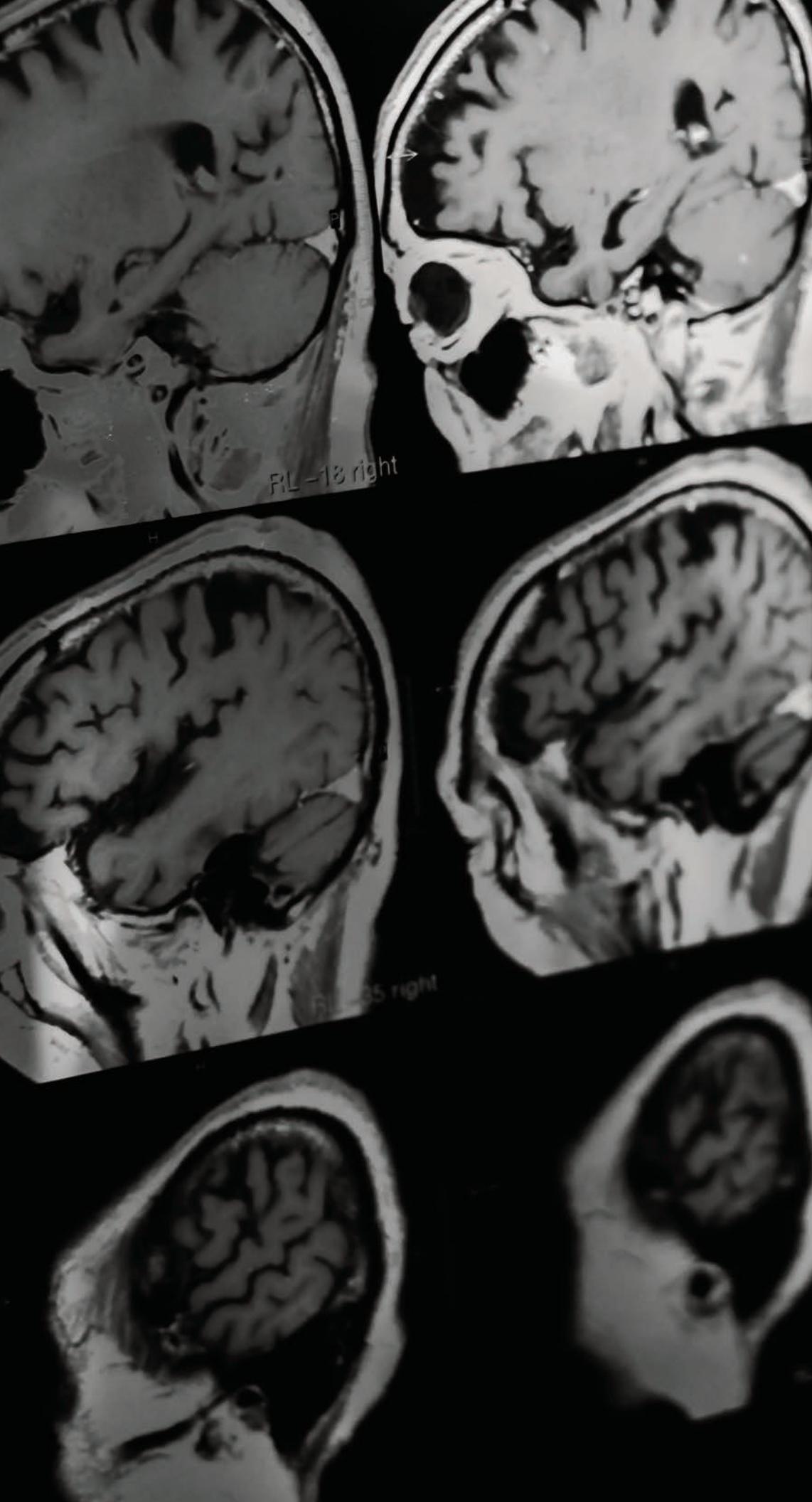
While forgetting often has a negative connotation, it can also be useful to rid ourselves of memories that are no longer relevant. "The memory of an animal is basically to serve it to succeed in a changing world," said Prof. Ziv, meaning that forgetting might be a good thing in some cases. Research related to this aspect of forgetting had been on the back burner, so Prof. Ziv is excited about moving this work forward from molecular experimentation to pre-clinical testing.

Working on the earlier end of the aging spectrum, Professor Philippa Melamed is investigating how a woman's childhood environment affects her reproductive longevity. In a recent study, Prof. Melamed's team showed that British-Bangladeshi women who grew up in Bangladesh, where they suffered a higher incidence of childhood inflammatory disease, had later puberty onset, and thus went into menopause earlier than

Bangladeshi women who migrated before the age of 8 to England, which has a cleaner environment and better health care system. Her group was then able to decipher some of the molecular mechanisms responsible for this shift.

"This is crucial for us," said Prof. Melamed, "because once a woman goes into menopause, we have a more rapid onset of aging diseases. Healthy aging starts in childhood." True to the THHI multidisciplinary mandate, scientists involved in Prof. Melamed's research hail from the areas of biology, anthropology, bioinformatics and big data, molecular biology, and even biophysics.

The THHI's collaborative approach is "extremely exciting because people learn about ideas they would not have heard about working in their own silos," said Prof. Ziv. And as they do, these talented researchers hope to discover solutions to some of the biggest challenges we face — including diseases that adversely affect healthy aging. ■



Professor Noam Ziv



Professor Philippa Melamed

"Rather than telling our investigators what they should be doing, we bring them together, and the magic is guaranteed to happen."

— Prof. Noam Ziv

Today's Chicago Innovators, Tomorrow's Emerging Leaders

Chicago Technion Innovators is a vibrant two-year program designed to educate future American Technion Society (ATS) leaders about the impact of the Technion. Each cohort consists of emerging leaders within the Chicago community interested in supporting Israel and its technological innovation, and in ensuring the future of the ATS. Innovators attend in-person and virtual events with faculty, students, and alumni to learn about the Technion's cutting-edge research and its important place in Israel's history. Graduates are invited to serve on Chicago's local leadership board, and over time may assume national leadership positions. The following interview was conducted with program co-founders **Seth Jackier** and **Julie Sirlin Pleshivoy**.



Seth Jackier

■ **Why is Chicago Innovators important for ATS and the Technion?**

Seth: Every charitable organization needs young talent. Technion Innovators is the pipeline that finds, vets, and develops that talent, making it crucial for the success of ATS. Our hope is that it will serve as a model for our partners in other cities around the globe.

■ **What was the genesis of the program?**

Julie: For many years, I attended ATS events and noticed a significant age difference between me and most of the attendees. It became important to me to attract younger people to the ATS National Board and to build the next generation of leaders. Being a mom of two young children and a full-time partner in a law firm, I was keenly aware of my limited time, but my passion for the Technion and its impact on Israel and the world meant that I needed to contribute in any way I could. Sharing



Julie Sirlin Pleshivoy

Moreover, the University plays an enormous role in serving, protecting, and educating Israelis of all backgrounds and religions as well as saving and improving the lives of people everywhere.

■ **Julie, what brought you to support ATS and the Technion?**

J: I was introduced to the Technion when I was in college. My childhood best friend from the former Soviet Union was a Technion graduate, and I was very impressed with her education. After graduating from college, I attended many ATS events with my work colleagues and continued my involvement throughout law school and thereafter during my professional career as an estate planning attorney. I had the privilege of working with clients who supported Soviet émigrés with scholarships to pursue their education and research at the Technion. I was moved by many of the immigrants, who, as Technion graduates, devoted their careers to science and technology. My connection to the Technion and its impact on Israel and the world inspired me to actively participate in ATS.

■ **Seth, your father and grandfather were the only father-son team to receive Honorary Fellowships, and your father led the organization and the Technion Board of Governors. Can you talk about your personal path toward becoming active in ATS?**

S: My family history with the University weighs heavily in my connection to ATS and my decision to get personally involved. Additionally, the Technion has also drawn me in due to a correlation between my personal values and those of the University, things like: environmental stewardship, capital efficiency, and approaching seemingly insurmountable problems with novel cross-specialty collaboration.

■ **What's in the water in Chicago? Why do many ATS national presidents and leaders hail from Chicago?**

S: Chicago possesses a strong and active Jewish community. Philanthropy and generosity are embedded in the culture here, and we happened to have had guys like Leonard Sherman and Ben Sosewitz. The two, who have sadly passed away, were once-in-a-lifetime talents that Chicago was just lucky to have. Leonard, for all his professional

success, would say that he was in the "business of the Jewish people." That kind of dedication is special and unusual and sets the tone for the ATS in Chicago. Moreover, the new Joel and Jeri Rothman Leadership Program builds on the tradition of the 21st Century Leadership Development Program, co-founded by Ben 25 years ago.

■ **Julie, can you speak to potential supporters who may also be young mothers like yourself about the personal challenges and rewards that come with ATS involvement?**

J: Time is the most precious thing we have, and I wish I had more time to give to ATS and its programs. My involvement with ATS and the Technion is rewarding and meaningful to me, because education is one of my core values, and I believe that education is the key to bettering Israel and the world.

■ **Seth, how do you define the program's success? What would you like to see in 10 years' time?**

S: We would like the program to be self-sustaining. And currently, we couldn't be happier with how our second cohort is going. Current co-chairs Avi Davidoff and Rob Bressler serve on the ATS Board and are two of the stars from our inaugural cohort. We have other leaders from the original cohort, like Sam Schwartz, who have also joined the Chicago ATS Board. And beautifully, we have in our second cohort Dylan Levin, who is the son of Jonathon Levin, one of our fantastic members from the first cohort. ■

June 1967—as the world focused on the Middle East conflict that became known as the Six-Day War, Ed Satell, then a young entrepreneur, listened at a fundraising event as an Israeli American woman spoke movingly about her husband returning to Israel to serve. “I couldn’t really afford what I pledged, but I knew I had to help and was so glad I did,” Mr. Satell said. “I never looked back. That moment stays with me, as it helped form my giving philosophy: Think WE, not just me.”

Honoring Ed Satell

Recipient of the American Technion Society's highest honor

On May 3, 2023, Mr. Satell received the Albert Einstein Award in recognition of “his extraordinary leadership and abiding commitment to the Technion - Israel Institute of Technology, the State of Israel, and corporate social responsibility.” The prestigious award is the highest honor bestowed by the American Technion Society (ATS).

“It’s an absolute thrill to get an award that has Albert Einstein’s name on it,” Mr. Satell shared. “He’s one of the most influential and admired scientists ever and had the vision to be among the founders of the Technion.”

Residing in Bala Cynwyd, Pa., and Jupiter, Fla., Mr. Satell served as a director on the ATS National Board (now emeritus), and as an honorary member of the ATS-Philadelphia Board of Directors. He and his wife, Cyma, support the University at the highest levels as Technion Guardians. For his many contributions, Mr. Satell has previously been awarded an honorary Technion Fellowship and honorary Technion Doctorate.

Mr. Satell had not planned to add another nonprofit to his philanthropic portfolio when ATS reached out to him in the mid-2000s. Professor Peretz Lavie, who soon became Technion President, learned of his interest in stem cell research and introduced him to the University’s top scientists in the field. As Mr. Satell’s appreciation for the caliber of research at the Technion grew, President Lavie appealed to him for other projects, most notably the University’s inaugural energy program, resulting in the Ed Satell Family Nitrogen-Hydrogen Alternative Fuels Reaction Research Laboratory, then a compelling cancer research project, Nanoghost cancer treatment delivery. The energy lab led to the formation of the company H2Pro. More recently, Mr. Satell became the principal supporter of the Satell Technion-MIT Global Leadership Program, to benefit the Technion’s most promising postdoctoral students. Through nine major initiatives supported at the Technion, his impact has been substantial.

“I didn’t choose the Technion, but fortunately, it chose me. It’s always been a wonderful two-way street,” he said. Mr. Satell grew up in Springfield, Mass., where, he noted, local leaders supported the synagogues, schools, and other institutions.



L-R / Professor Gideon Grader, Cyma Satell, Ed Satell, Professor Peretz Lavie, Lena Lavie, Michael Waxman-Lenz

“That allowed me to have a better life. I so greatly admired their generosity in helping the community that I committed myself to doing the same when it came to be my turn.”

Raised in a middle-class Jewish neighborhood in the 1940s, he had a newspaper route and a lemonade stand. “They were great experiences,” he recalled. “Each one came back to help me.”

As a college student at the University of Connecticut, he found he was attracted to business — and was good at it. Recognizing that many young women in that era were building hope chests, he started selling them (with their mothers’ encouragement and presence) quality cookware, china, and flatware sets, through installment payments. “The idea was to plan ahead, to save for things they would need to start a household,” Mr. Satell explained. Graduating in 1957, he grew the business, ultimately training thousands of college students each summer in life skills, marketing, and selling

techniques. Mr. Satell transformed this business as market conditions changed and founded a diversified executive information and publishing company. His commitment to giving back never faltered.

Mr. Satell’s quiet philanthropy targets five major giving areas: disadvantaged children; young people of promise; civic and community institutions; medical and energy research; and his heritage. To fund his giving, he established a nonprofit corporate trust and the Satell Family Foundation, which have supported more than 60 initiatives with more than 40 nonprofits. Most recently, he created the Satell Institute, a Think and Do Tank for corporate social responsibility with a \$15 million endowment, so it could serve its CEO members without fees or dues.

“No matter how much we have accomplished, we all stand on the shoulders of those who came before us,” he said. “It is our responsibility to leave the world better than we found it.” ■

“No matter how much we have accomplished, we all stand on the shoulders of those who came before us. It is our responsibility to leave the world better than we found it.”

— Ed Satell

A Bridge to “Endless Opportunities”

“Having firsthand experiences will give everyone involved a better picture of the possibilities and potentials of the partnership.”

— Prof. Ariel Orda

When asked what collaborative success between the Technion and the Joan and Irwin Jacobs Technion-Cornell Institute in New York City might look like five years from now, Technion Professor Ariel Orda said, “I’d love for every Technion student and faculty to see the Jacobs Institute and the Cornell Tech campus as a home away from home. And the same goes for those in the other direction.”

On a mission to enhance collaboration between the Technion and the Jacobs Institute at the Cornell Tech campus, seven Technion deans visited Roosevelt Island in May 2023. The NYC campus “creates a natural bridge between the Technion to New York City and points all over the U.S.,” said Prof. Orda, who heads the Jacobs Program at the Technion.

The visiting deans were chosen according to the relevance of their discipline to the activities at the Jacobs Institute and Cornell Tech — pairing, for example, Technion deans from electrical and computer engineering, biomedical engineering, and architecture with Jacobs faculty in connective media, health tech, and urban tech. They participated in roundtable discussions and one-on-one meetings with Cornell Tech and Jacobs faculty, attended Cornell Tech’s Open Studio Day, and met with deans and department chairs from

Cornell University’s Ithaca campus to strengthen connections there. They also met with Weill Cornell Medicine Associate Professor Fei Wang.

The visit was aimed at increasing joint teaching activities, joint student supervision, and collaborative research projects. “Having firsthand experiences will give everyone involved a better picture of the possibilities and potentials of the partnership,” said Prof. Orda, adding that the Technion is considering following Jacobs’ lead in launching an urban tech hub.

The Technion currently brings Cornell Tech students to Haifa on its 10-day cultural iTrek program, and Technion undergraduate and graduate students conduct summer internships at the Jacobs Institute. But Prof. Orda would like to see an increase in visits and sabbaticals of students and faculty in both directions — from NYC to Haifa and vice versa. “The more collaboration, the better,” he said, hoping it would result in new ideas for joint courses, programs, and degrees.

Competition for students and faculty is fierce among elite universities worldwide. “We are the only university in Israel that has such a strong tie with a leading university in the U.S.,” said Prof. Orda. “Being able to offer the special attributes of our partnership with Cornell University

provides us with powerful tools to attract the best candidates in Israel and abroad.”

Professor Ron Brachman, director of the Jacobs Institute, added his perspective: “We have done exciting things over the last five years to increase the flow of people and ideas between Cornell Tech and the Technion, but this visit is unprecedented. The willingness of senior Technion colleagues to travel to our campus, coupled with the excitement of senior Cornell leaders — including the president and provost — to meet in New York City, provides an opportunity to take the collaboration to another level. The Jacobs Institute, Cornell Tech, Cornell University, and the Technion will all gain tremendously from this first-of-its-kind get-together.”

The Jacobs Technion-Cornell Institute is a landmark partnership between Cornell University and the Technion, with a focus on applied science and engineering. Since launching in 2012, Jacobs has been promoting entrepreneurship and boosting New York City’s tech workforce. Its inaugural 2016 graduating class marked the first time an international university granted an accredited degree for studies on U.S. soil. The Technion remains the only foreign institution to do so in the U.S.

“The opportunities are endless,” said Prof. Orda. ■



Professor Ariel Orda, Andrew and Erna Viterbi Faculty of Electrical Engineering, Technion



L-R / Professor Danny Raz, Professor Rann Smorodinsky, Professor Guedi Capeluto, Professor Shlomo Bekhor, Professor Idit Keidar, Professor Ariel Orda, Professor Ami Aronheim, Professor Haim Azhari



L-R / Ron Brachman, Director of the Jacobs Technion-Cornell Institute, Professor Israel Cidon, Andrew and Erna Viterbi Faculty of Electrical Engineering, Technion

American Technion Society Awards & Honors



Pictured left / Guardian pin recipients Valerie and David Farkas with President Uri Sivan

Pictured right / Larry and Andi[”] Wolfe, 2022 Albert Einstein Award recipients



Pictured left / Zahava Bar-Nir[”], recognized for her long-time commitment to ATS and the Technion, with Steve Berger[”], chair of the board, and Michael Waxman-Lenz, CEO

Pictured right / Guardian pin recipients Sol[”] and Wendy Gordon with President Uri Sivan



Pictured left / Jewel Prince and Nancy Aronson[”], recipient of the Spotlight on Impact award

Pictured center / Guardian pin recipients Jeri and Joel[”] Rothman with President Uri Sivan

Pictured right / Guardian pin recipients Sandy and Senator Paul[”] Steinberg

ATS Board of Directors
Technion Board of Governors



Eliad Peretz '13 was just 10 years old when he decided what he wanted to do in life. Helping his grandfather harvest olives, the pair would return at dusk, “lay back on blankets on the lawn, and look up at the sky,” Dr. Peretz recalled. “Those were the moments that helped me identify my path.” By fifth grade, he wrote what he called his first five-year plan, already knowing he wanted to work at the National Aeronautics and Space Administration (NASA).

Earlier this year, the NASA scientist and Technion alumnus was awarded the NASA

Exceptional Achievement Medal — entering the pantheon of recipients that include the famed astronomer Carl Sagan and astronaut Alan Shepard. The honor was the

Celebrating NASA Scientist & Alum Eliad Peretz

latest in a string of prior awards, including the NASA Early Career Achievement Medal, making him the most awarded Israeli in the agency’s history.

Recognizing these achievements, which he credits in part to the Technion, the American Technion Society (ATS) feted Dr. Peretz with two days of celebration in Washington, D.C., in May. “This is a

journey, and the Technion has been part of the journey for almost the last 20 years,” he said. “My connection to the Technion runs deep. Their fingerprints are everywhere.”

Dr. Peretz attended the Technion pre-academic program to prep in subjects not offered in his ultra-Orthodox primary school before earning his Technion bachelor’s degree in aerospace and aeronautical space engineering. He met his wife at the University while she was studying on a Fulbright scholarship.

In his role of mission and instrument scientist in the Heliophysics Division at the NASA Goddard Space Flight Center in Maryland, Dr. Peretz is responsible for defining scientific questions such as, “Are there habitable planets outside of the solar system?” as well as creating operation and execution plans for his projects. He also serves as lead researcher with Nobel Laureate John C. Mather on the ORCAS mission, a hybrid space and ground observatory, and the Remote Occulter, an orbiting starshade that works with extremely large telescopes on the ground to study planetary systems. In April 2023, Dr. Peretz and his team acquired the sharpest image ever taken by a telescope of planets several hundred light-years away.

“In space, you can’t be experts in everything,” he said. You need to be able to think critically, process information quickly, and understand how that information affects fields outside of your specialty — qualities imparted by a Technion education. “The Technion taught me to independently study new fields, to become an autodidact,” he said. Just like “diamonds are made under pressure and heat,” he said, the Technion’s competitive environment produces scientists who can manage multiple tough projects smoothly. “That’s priceless.”

Reflecting on the NASA medal and the ensuing ATS celebration he said, “I’m very happy that the Technion is a meaningful part of this achievement. For me, it’s closing the cycle.” ■

Researchers Offer “Hope” for Treating Diabetes

As a boy of just 12, Technion Neubauer Assistant Professor Shady Farah gave his grandmother daily insulin injections. “It was tough,” he recalled. “You love her and care about her, and it causes pain.” She would often tell him, “Shady, maybe one day you can help find a cure for this.”

Prof. Farah took her words to heart. Securing a \$700,000 grant from the Juvenile Diabetes Research Foundation

(JDRF), he and Assistant Professor Joshua Doloff of Johns Hopkins University are advancing an efficient, pain-free solution for people suffering from type 1, or “juvenile” diabetes, a chronic condition in which the pancreas produces little or no insulin by itself.

If successful, the new technology, dubbed “Hope,” could do away with painful insulin injections, making life easier for an estimated 8.4 million people living with type 1 diabetes worldwide.

Diabetes patients have options for managing the disease, but they all come with challenges. In the traditional approach, patients prick their fingers to obtain a droplet of blood, measure their glucose level, inject themselves with insulin accordingly, and prick again to ensure they got it right. This method is accurate but intrusive, as patients usually need to test several times a day.

Alternatively, patients can wear a continuous glucose monitor (CGM) with a sensor just under the skin that measures glucose levels and alerts the wearer’s smartphone to release insulin as needed. But CGMs are not always accurate, and the sensor can cause scar tissue.

There is a third, more promising treatment option: transplanting clusters, or “islets,” of healthy donor pancreatic cells that sense the patient’s glucose level and produce insulin inside the patient. But like all transplants, these artificial biological

Pictured right / Professor Shady Farah with a member of his research team

Background image / The Stedelijk Museum Breda in the Netherlands included the crystals in *True Beauty*, their exhibit of the most beautiful images in 21st-century science



pancreases risk rejection by the immune system, so patients must continuously be on immunosuppressant drugs. Scientists have improved the method by encapsulating the islets in jellylike hydrogels that provide some protection from the immune system — but not enough. That’s where Profs. Farah and Doloff come in.

While postdoctoral fellows at the Koch Institute at the Massachusetts Institute of Technology and the Boston Children’s Hospital/Harvard Medical School, the two developed crystallized anti-inflammatory drugs that fend off unwanted immune responses, which they then incorporated into the hydrogels holding the insulin-producing cell islets. The crystals dissolve slowly, allowing the islets to produce insulin without triggering rejection in the areas surrounding the hydrogel. The rest of the immune system is untouched, so patients don’t need to take immunosuppressant drugs.

Now, Profs. Farah and Doloff are using the grant to develop next-generation crystals that would protect more

complicated transplants, such as animal-to-human grafts and stem cells that could be differentiated into pancreatic cells — providing patients with a larger pool of tissue for transplants. “We named them ‘Hope’ because they might help us treat many conditions in the future, not just diabetes,” said Prof. Farah. The advanced crystals could be applied to other implantable medical devices such as pacemakers, stents, or sensors. They have already shown promise in preclinical trials, curing diabetes in mice for 1.3 years without rejection or the need for insulin injections. If all goes well, Prof. Farah believes the technology could be commercialized in five to 10 years.

“I’ve seen many people with diabetes, and I want to make a difference,” said Prof. Farah. “With this grant, I hope we can develop technologies to help patients with type 1 diabetes because they really are suffering and deserve a more convenient lifestyle.” ■

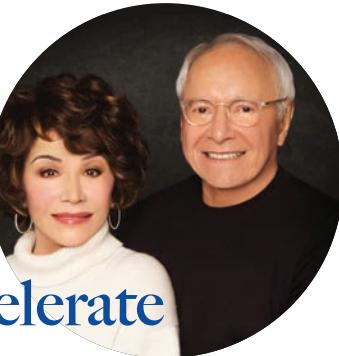
Historic Gift for Catalysis Will Accelerate a Sustainable Future

Lynda and Stewart Resnick, co-owners of California-based The Wonderful Company, have pledged \$50 million to transform the Technion’s research of sustainability and catalysis. The Stewart and Lynda Resnick Sustainability Center for Catalysis will recruit scientists and promote research collaborations with industry to uncover new ways to maintain global population growth while protecting the planet for future generations.

“The Resnicks’ philanthropic vision demands forward-thinking action to preserve and protect our planet,” said Michael Waxman-Lenz, CEO of the American Technion Society. Rapid population growth and longer life expectancies are projected to result in more than 10 billion people living on Earth in the year 2050, while the world increasingly depletes its essential natural resources. The new Sustainability Center for Catalysis is part of a Technion initiative to create innovative solutions to produce food, medicine, and other critical products that will enable humankind to meet its needs efficiently while lessening the negative impact on nature.

Catalysis is a chemical process that dramatically speeds up a reaction between molecules and is involved in 90% of production processes in industry. The constant improvement of catalysis processes makes industrial methods more efficient and reduces their environmental damage, hence the connection between catalysis and sustainability.

“The daily impact of environmental change is seen through every aspect of our world. We need great minds across the globe working to preserve the planet to prepare for the needs of future generations. It’s now or never,” said Stewart Resnick. “Through the resources, dedication, and efforts that will emerge from this sustainability and catalysis center, we will confront the climate crisis rather than hide from it. Lynda, The Wonderful Company, and I are proud to call the Technion partners.” ■



Technion Board of Governors

June 10–13
2023



Pictured left / Honorary Doctorate recipient Stephen B. Klein[†] with President Uri Sivan

Pictured right / Honorary Fellowship recipients Avraham Ashkenazi^{††}, Murray Dalfen (Canada), Cathy^{††} and Jim Deutchman, David Hankin, Moriel Matalon (Israel), and Janet Shatz Snyder^{††}



Pictured left / Honorary Doctorate recipients Marty[†] and Grace[†] Rosman with President Uri Sivan and Professor Naama Brenner, executive VP for academic affairs

Pictured right / Scott Leemaster^{††}, chair of the Board of Governors



Pictured left / Janet Shatz Snyder^{††}, Honorary Fellowship recipient, speaking on behalf of the Fellows

Pictured right / Marty[†] and Grace[†] Rosman with President Uri Sivan and Dr. Rafi Aviram, executive VP and director general of the Technion, at the Rosman Center Cornerstone Ceremony

[†]ATS Board of Directors
^{††}Technion Board of Governors



The Gift of Security

Dr. Ira and Chana Green came of age in the wake of the Holocaust and appreciate the role Israel has played as the homeland for the Jewish people. They take pride in how the country evolved from a desert to an agrarian oasis, and then into an epicenter of high technology, medical advances, and sustainable practices.

To ensure Israel's prosperity amid threats to its security, the Oxnard, Calif., couple designated their estate to defense research. "We see our support for the Technion as an investment in a country that is not only a wellspring of innovation, but also central to our heritage as Jewish people," said Ira.

After their lifetimes, Ira, 86, and Chana, 81, will create an endowment at the American Technion Society to support Technion projects centered on Israel's defense and security needs.

Their interest stems from Ira's career as a nuclear physicist for TRW and then Northrop Grumman, where he advanced cutting-edge aerospace projects to detect nuclear activity on Earth. The experience underscored the kinds of threats that could imperil a nation — and technologies that could protect citizens from such dangers.

Ira and Chana see connections to research at the Technion. Technion alumni, for example, were integral to the development of Iron Dome and other missile defense systems that have saved countless Israeli lives and helped prevent conflicts from escalating through the region.

Technion faculty and students "are doing things we only dreamed about in college," said Ira, who attended the University of California, Los Angeles. "With our estate gift, we hope to ensure the security of the Jewish homeland for generations to come." ■

Contact Us

By joining The Genesis Circle, our planned giving society, you too can support innovation and research to secure the future of Israel and leave a legacy of generosity. Explore planned giving opportunities and find a charitable plan that works for you.

Judy Sager, Executive Director of Planned Giving
judy@ats.org / 781.531.0441



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Technion Centennial

When the Technion enrolled its first students in 1924, no one could have fathomed the impact it would have on Israel's economic development and global scientific advancement. As we approach the University's 100th anniversary, it continues to nurture the next generation of exceptional scientific leadership. Stay tuned for a year full of events and honors as we celebrate the Technion's Centennial.