

Women of the Technion

*Changemakers for
21st Century Challenges*



AMERICAN
TECHNION
SOCIETY



Six of the Technion's seven women deans

(Bottom row l-r) Prof. Marcelle Machluf, Dean of the Faculty of Biotechnology and Food Engineering and Prof. Yael Mandel-Gutfreund, Dean of the Faculty of Biology; (second row l-r) Prof. Idit Keidar, Dean of the Andrew and Erna Viterbi Faculty of Electrical and Computer Engineering and Prof. Ayelet Fishman, Dean of Students; (top row l-r) Prof. Tali Tal, Dean of the Faculty of Education in Science and Technology and Prof. Gitti Frey, Dean of the Faculty of Material Sciences and Engineering (Not pictured: Prof. Stavit Alon-Shalev, Dean of Continuing Education and External Studies)

Pictured on cover / **Prof. Marcelle Machluf**

Women of the Technion

Technion women have always been trailblazers. When the Technion opened its doors in 1924 – at a time when women were forbidden from academia in most countries – Technion's first class of 17 students included one pioneering woman. Technion women have remained a force to be reckoned with since then. From lifesaving advances in health care, to building the internationally recognized businesses of today, to developing the technologies of tomorrow, female Technion faculty, students, and alumnae are doing extraordinary things for the benefit of Israel and the global good.

The Technion - Israel Institute of Technology believes that the next generation of global leaders and innovators *must* include women. It's why the Technion is a leader in promoting women in STEM research and academic leadership positions. An analysis of the promotion process at the Technion found that since 2000, there has been no difference between the timing of promotions for men and women in the Technion's faculty. Today, seven of the 13 deans at the Technion are women, while 44% of those who have enrolled at the university are women. In addition, nine out of

27 new faculty members who recently joined the institution are women.

But to achieve more equitable representation of women in STEM fields and Technion leadership, President Uri Sivan believes the Technion must do more than simply recruit women – it's critical to support women as they pursue their professional ambitions, whether they are a first year student or a senior faculty member. Under President Sivan's leadership, the Technion is taking steps to eliminate the stumbling blocks that can stymie women's careers by reducing subconscious biases; encouraging more women to join management positions, committees, and key positions; and providing scholarships and wraparound support for women at every stage of their education.

This commitment even extends to the next generation of scholars, scientists, inventors, and innovators. Every year, the Technion mentors, trains, and inspires thousands of young women – - young women who later return to the Technion as students eager to realize their own trailblazing dreams.



Professor Ayelet Fishman

Professor Ayelet Fishman '89, M.S.'92, Ph.D.'02 is reinventing **healthy eating** and **cleansing the environment** with innovative research in her Laboratory of Molecular and Applied Biocatalysis. Appointed in March 2020 as Dean of Students, a position that helps **bridge the gender gap** in academia's administrative leadership, she is also committed to the welfare, personal advancement, and cultural aspects of student life.



- Developed technology to **purify wastewater** of the carcinogen formaldehyde
- Created a low sugar, high protein **vegan chocolate pudding** with the same texture as its animal-based counterpart
- Found a solution to help Israeli farmers keep their **peanut crop disease-free**
- Organized Israel's first **Olympics in Biotechnology for high school students**
- Chaired major events in the **Israeli food industry**



Professor Shulamit Levenberg

Professor Shulamit Levenberg is changing science in the lab, and changing lives. Her more than two decades of research is laying the foundation for less invasive methods of tissue regeneration and organ transplants. Prof. Levenberg is the Stanley and Sylvia Shirvan Chair in Cancer and Life Sciences in the Faculty of Biomedical Engineering, head of the Rina and Avner Schneur Center for Diabetes Research, and one of a handful of women at the Technion who have served as a faculty dean. She is the chief scientific advisor for two startups based on her research and is integrally involved in:

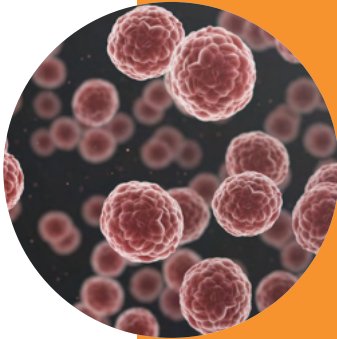


- Pioneering research for **spinal cord injury treatments**. Reversed paralysis in rats via the implantation of human stem cells into their severed spinal cords
- Head of the Technion **3D Bio-printing Center**, paving the way for patient customization, such as a new ear that fits the injured area
- Identified possible cure for **Type II Diabetes**, by engineering muscle cells that absorb sugar at increased rates
- Chief Scientific Advisor of NanoSynex, whose **same-day diagnostic test** distinguishes between bacterial and viral infections. They also developed a COVID-19 rapid test used in Europe and Israel
- Co-founder of Aleph Farms, a sustainable food startup that created the **world's first lab-grown ribeye steak**



Professor Marcelle Machluf

Professor Marcelle Machluf has pioneered **life-changing innovations** in tissue engineering, cancer research, and drug delivery systems, and is **an inspiration to women from all backgrounds**. As a child, she and her family immigrated from Morocco to Israel. Today, Prof. Machluf is dean of the Technion Faculty of Biotechnology and Food Engineering, head of the Carasso FoodTech Innovation Center, a member of the Technion Integrated Cancer Center and the Russell Berrie Nanotechnology Institute, and is becoming **one of Israel's national treasures**.



- Named as one of Israel's **60 most impactful scientists**
- Founder of NanoGhost, whose technology **targets cancerous tumors** while evading the immune system
- Nano-ghost technology can be used to entrap the **coronavirus**
- Working on **immunotherapy treatment** that inhibits the growth of melanoma with just one-millionth of the usual drug dose
- Developed **scaffolds for tissue** engineering cells for the heart and other organs
- Working on advances in **tissue regeneration**



Professor Kira Radinsky

Visiting Professor Kira Radinsky '08, Ph.D. '12 has turned the business of **forecasting high impact events** on its head. Chairwoman and CTO of Diagnostic Robotics, she previously served as chief scientist and director of data science for eBay, co-founder and CTO of SalesPredict (acquired by eBay), and researcher for Microsoft. She has successfully predicted geopolitical events, business trends, and even pandemics. Using **machine learning** to cull through reams of data from news articles, the web, and more, her **novel predictive algorithms** can spot patterns and correlations of different events.



- Predicted the **first cholera outbreak** reported in Cuba in 50 years
- **Uncovered patterns** to predict Ebola outbreaks
- Identified COVID hotspots in Israel and predicted its path
- Helped businesses **better price** their products, foresee how a product will sell, and connect products to buyers based on browsing history
- Included on *Forbes'* **"50 Most Influential Women"** and *MIT Technology Review's* **"35 Young Innovators Under 35"**



Professor Daniella Raveh

Professor Daniella Raveh '92, Ph.D.'99 is changing the way students study **aircraft design**. Passionate about aerospace, teaching, and improving undergraduate students' experience, she has **developed an experimental platform** for students to rapidly design, build, and test environmentally friendly aircraft using a plane made entirely on a 3D printer. The test plane, called A3TB for Active Aeroelastic Aircraft Testbed, is cost effective and an advancement over current methods that require R&D simulations and test flights that risk crashing.



- Established a program in the Faculty of Aerospace Engineering to **promote leadership in R&D departments of the Israeli Army**
- **A3TB's maiden test flight** demonstrated it could fly horizontally and maneuver at sea level
- **A3TB won the Student Project Competition** at the Israel Annual Conference on Aerospace Sciences



Ph.D. candidate Rawan Halabi (left) and Technion alumna Dr. Avigail Landman of the Department of Material science and Engineering prototyped a system for efficient and safe production of hydrogen using only solar energy



Keren Amiel

Keren Amiel M.D.'18 paved the way for people with disabilities when she proudly graduated from the Technion and became Israel's **first visually impaired medical doctor**. Amiel suffers from congenital nystagmus, a condition that causes her eyes to "dance" uncontrollably, resulting in significant visual impairment. Amiel worked closely with the Ruth and Bruce Rappaport Faculty of Medicine to identify the challenges in studying and figure out adjustments without compromising the quality of her education. She is currently a **resident in child and adolescent psychiatry** in Israel.



Eden Ayaso

Eden Ayaso '22 is changing the face of Israel, helping to create a more productive, dynamic, and **diverse society**. Born in Israel after her parents made Aliyah from Ethiopia, she grew up in a difficult neighborhood in Israel's periphery. Her parents bought her and her siblings a computer to encourage them to play inside, and she took to her studies. Ayaso developed a love for math and graduated high school with **honors in physics and computer science**.

She has **succeeded against all odds**. Initially rejected from the Israel Defense Forces due to diabetes, she persevered and landed a position in **Air Force Intelligence**. She excelled in the **Technion's Pre-Academic Preparatory Program** with support from the **Atidim Program**, which aims to close Israel's socioeconomic gaps. Accepted into the Technion, she is now pursuing one of the most demanding majors – computer science.



Neta Blum

Neta Blum '14, M.S. '18, Ph.D. '22 pushes the boundaries of exploration in **aerospace engineering and encourages other young women to follow her lead**. Since discovering her passion for science and technology as a young girl, Blum has carved out an exceptional career in academia and the military, where she is often the only female in the room.

She attended **Brakim**, a demanding, male-dominated initiative of the Technion and **Israel Defense Forces**. After completing her bachelor's and master's degrees in mechanical engineering and graduating from the Israeli Air Force's cadet course, she was appointed Aircraft's Mishaps, Crashes and Failure Officer, **investigating accidents for the IAF**. Today, Blum heads the **Cyber Section** in the Israeli Ministry of Defense while finishing her Ph.D. in aerospace, aeronautical, and astronautical engineering.

Giving back, she founded "At" (Hebrew for you, feminine), which recruits accomplished female tech leaders to speak with young women about career opportunities in STEM. Blum was named to *Forbes Israel's* "30 Under 30" list of technology superstars.



Avigail Landman

Avigail Landman '13, M.S. '15, Ph.D. '19 is a rising star in the field of **energy engineering** and Department Manager at startup H2Pro. She received multiple honors and awards for her scholarship in biochemical engineering and her Ph.D. research in the Grand Technion Energy Program. **Co-founder of award-winning H2Pro**, she is helping develop and commercialize an efficient method of producing hydrogen fuel, one of the most sought-after alternative fuels in this age of climate change.

H2Pro won Royal Dutch Shell's New Energy Challenge 2020 for "best company in the scale-up track," and recently received \$22 million in investment from Bill Gates. Dr. Landman was included in Israeli business daily *Calcalist's* 2018 "**36 under 36**" superstars, and was selected to represent Israel in an international forum for up-and-coming creative thinkers.



Yael Vizel

Yael Vizel '10 has been hailed as a **fashion disruptor**, redefining the experience of online clothes shopping. Her fashion startup **Zeekit** uses computer vision skills she gained at the Technion to create a virtual fitting room, allowing online shoppers to see how they will look in an item before buying.

Vizel has broken through the proverbial glass ceiling wherever she went. She became the first woman in the **Israeli Air Force** to command field technology crews, lead aerial technology missions, and eventually head the Telecommunications Officer's Course – paving the way for women who came afterwards. At the Technion, she was one of seven women studying electrical engineering among 150 men, and a finalist in **BizTEC**, Israel's top technological entrepreneurship competition. Vizel **co-founded Zeekit** in 2014, and was named one of Israel's top entrepreneurs the following year. In May 2021, Zeekit was acquired by **Walmart**.

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The American Technion Society supports visionary education and world-changing impact through the Technion - Israel Institute of Technology. Based in New York City, we represent thousands of U.S. donors, alumni, and stakeholders who invest in the Technion's growth and innovation to advance critical research and technologies that serve the State of Israel and the global good. For over 80 years, our nationwide supporter network has funded Technion scholarships, research, labs, and facilities that have helped deliver world-changing contributions and extend Technion education to campuses in three countries.



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