In recent years, a new spirit has pervaded all areas of life, from academia to industry, through to the new technologies on which our lives depend. This is the spirit of innovation. In the 21st century, innovation is Israel, is Technion. As a nexus in the global ecosystem of progress, we are proud to offer the 2019 Technion President’s Report under the banner iTechnion.
Welcome to the 2019 President’s Report, in which we review a decade of progress and look forward to continuing fruition of the Technion vision.

When I received the tremendous honor of becoming Technion President ten years ago, I felt that I was handed an enormous responsibility: not only to maintain Technion’s status as Israel’s first and leading university but to steer it onward and upward to new levels of excellence and global standing. The challenges along the way were numerous, but now that I am completing my tenure, I look back at the last decade with satisfaction. Technion’s role at the forefront of science and technology is indisputable, both in Israel and around the world.

When I became President, the global financial crisis of 2008 was fresh and Israeli higher education was in an existential crisis, caused by the proliferation of new private colleges and by the diminished status of academia within Israeli society in general.

At the beginning of my tenure, I presented a vision to the academic assembly in a speech laying out the goals and priorities for my presidency. This strategic vision arose out of an intimate knowledge of the university since joining the faculty in 1975. Prior to my presidency, I was dean of the Ruth and Bruce Rappaport Faculty of Medicine for six years and Technion Vice President for Resource Development and External Relations for seven years.

This year’s President’s Report has a dual role. As always, it relates Technion’s development since the last Board of Governors meeting, but this year, we also summarize the progress of the entire last decade. It is an opportunity to revisit our strategic vision of 2009 and compare it to what actually unfolded.

At the time, I divided my strategic vision into fields which I deemed critical to the university’s development: recruiting new faculty, improving the student experience, advancing the level of research conducted on campus, developing the campus, and strengthening Technion’s global role.

Strategic Goal: Replenishing the Faculty

In 2009, Technion’s faculty had been reduced due to a wave of retiring baby boomers. The departure of a large cohort of professors affected the quality of the education and research. Consequently, a top priority was to refill the faculty’s ranks with first-rate young professors.

I was personally involved in recruiting candidates, meeting with the most promising men and women in their fields to persuade them to join Technion. The only way to replenish the faculty with outstanding educators and scientists would be to provide up-and-coming stars with cutting-edge laboratory facilities on a par with those at top universities around the world. Consequently, during my tenure dozens of state-of-the-art labs were built and renovated throughout the campus in order to accommodate incoming new faculty – most of whom were moving back to Israel after spending years at the finest institutions in the world. A large share of the campus development budget was allocated to these projects every year.
Approximately half of Technion’s current faculty was hired in the past ten years. See page 6 to meet some of these impressive young professors.

**Strategic Goal:** Upgrading the Student Experience

It is a delight to be part of the heightened spirit on campus. Over the past decade, the overall student experience at Technion has changed dramatically. Despite being a first-rate teaching university, many aspects of student life were not optimal ten years ago, and this meant that a growing number of excellent potential students were choosing to study elsewhere. We made it a top priority to empower a nurturing and inspiring educational environment in which each and every student can flourish.

A committee headed by Prof. Yachin Cohen was tasked with examining the student workload, and its findings led to important changes implemented as of 2013. These included shortening the semesters and the exam periods, as well as coordinating and balancing the workloads of students in different faculties, among other important steps. The Students Association has been involved in the ongoing efforts to improve the student experience at the university.

The Technion Center for Promotion of Learning and Teaching continues to play a key role in upgrading the quality of teaching, which is a critical factor for improving student satisfaction. Intensive efforts are being made to introduce more dynamic and flexible learning environments, as well as innovative, non-traditional forms of learning suitable to the 21st century, such as MOOCs, flipped classrooms and video lectures. (See page 12)

Another initiative with a significant impact on teaching quality is the Yanai Prize for Excellence in Academic Education. Launched in 2011, the Yanai Prize recognizes faculty members who set an example through their valuable contributions to teaching, and who strive to improve student involvement which enhances the sense of belonging. The prize is considered prestigious and provides an incentive to improve classroom performance and interaction with students. (See page 14)

All these efforts have begun to bear fruit, and we have made a quantum leap in recent years. Technion has now been voted the top Israeli university for student satisfaction for three consecutive years!

**Strategic Goal:** Advancing Basic and Applied Research

A fundamental part of the Technion founding vision is to empower Technion’s position at the front line of scientific and technological research and development. In joining the ranks of the world’s leading scientific and technological research universities, Technion is of service to the State of Israel and to all of humanity. In addition to hiring top researchers to join our faculty, the funding of research labs and equipment has increased by 93 percent. Moreover, we have dedicated a great deal of energy to raising funds for research. During my tenure, sponsored research from external sources has grown by 50 percent, from $61.7 million in 2009 to $92.8 million in 2018.

We have also encouraged collaboration between Technion scientists and industry. The new Center for Machine Learning...
and Intelligent Systems that was recently inaugurated, in partnership with Intel Corporation, is just one example of a 21st century Technion platform that facilitates cooperation between Technion faculties and high-tech companies, both Israeli and multinational. (See page 20)

Another focus has been to increase global collaboration. Technion has academic collaboration agreements with 213 universities in 41 different countries, and has submitted 15 cooperation projects within the Erasmus+ program to strengthen cooperation with European universities. (See page 36)

Technion frequently makes headlines thanks to the numerous, highly impressive breakthroughs emanating from its labs. It is heart-warming that many of these groundbreaking discoveries are improving the world and benefitting humanity. Just this past year, the work of our scientists is expected to improve the quality of brain scans, regenerate damaged tissue, revolutionize information processing and predict the effectiveness of antibiotic cocktails, among many other exciting advances. (See page 16)

Thanks to the hard work of T3, the Technion Technology Transfer Unit, optimal alliances are being forged between scientists, industry and investors in order to bring Technion innovations to the marketplace. The new DRIVE accelerator program for entrepreneurs who are part of the Technion community and whose startups are in the pre-seed or seed stages is also showing impressive results after only 2.5 years. (See page 35)

During the last ten years, three new buildings have been inaugurated: the Emerson Family Life Sciences Building, the D. Dan and Betty Kahn Mechanical Engineering Building and the David and Janet Polak Visitors Center. During this period, many older buildings underwent significant renovations, and labs were added and upgraded on a massive scale throughout the campus.

The Technion is giving a whole new kind of welcome to visitors. All entrances to Technion City have been upgraded and the new main gates and approach roads are designed to ease traffic. Other large-scale ongoing projects included accessibility, and the upgrading of basic infrastructure such as air-conditioning and water-saving systems, and improving campus safety.

In addition, nearly 1,000 new dorm beds have been added thanks to several major projects: the construction of the Stanley Shalom Zielony Graduate Student Village, the new undergraduate
student village, and substantial renovations of the Canada Dormitory Village and the Rifkin Dormitories. Two more 14-story towers with 314 beds will be ready in 2020.

See page 10 for a map of the campus that highlights the changes made in the past decade.

**Strategic Goal: Globalization**

Our ambitious strategy of 2009 spoke of the critical importance of facilitating Technion’s expansion from the local to the global arena. To this end, I led several large-scale initiatives aimed at deepening Technion’s ties with the international scientific and academic community.

The Technion International School, offering English-language degrees and numerous academic programs, has grown from 39 students in 2009 to over 1,000 in 2018. The number of Technion students taking part in international student exchange programs has risen sharply.

During my tenure, we have seen a significant increase in academic collaborations in the global arena and particularly with Europe.

On January 1, 2019, Technion became the sixth member of the prestigious EuroTech Universities Alliance, a network of top-tier research-based universities known for their scientific excellence and vibrant innovation ecosystems. The combination with the great strengths of the other members of the alliance, an elite group of European universities similar to Technion, will help us ensure we are at the forefront of scientific research.

The jewel in the crown of Technion’s globalization efforts, however, is the opening of our two overseas campuses. The Guangdong Technion-Israel Institute of Technology (GTIIT) in Shantou, China, opened in 2017; and the Joan and Irwin Jacobs Technion-Cornell Institute, opened in 2013 as a partnership between Cornell University and Technion. [See page 38]

It is wonderful to share with you that we have made significant progress with each of our strategic goals. Technion is an institution whose local and global contribution is considerable – in excellence, teaching, innovation, and outstanding scientific and technological breakthroughs. It has been an honor to stand at the helm of this venerable institution and I am confident that Technion will continue on a course of excellence and success for many more years to come. It is with deep gratitude that I end my tenure as Technion President, passing on the beacon of the Technion vision to my successor, Prof. Uri Sivan.
MY TECHNION

IMPASSIONED, INDUSTRIOUS, INSPIRED
Meet some of the outstanding young professors who are bringing fresh energy and cutting-edge research to Technion, Israel and the world.

STRATEGIC GOAL: ATTRACTING THE BEST AND THE BRIGHTEST NEW FACULTY

Prof. Ashraf Brik
SCHULICH FACULTY OF CHEMISTRY

Ashraf Brik, who is an Arab Israeli, received his PhD in Bioorganic Chemistry from Technion and was a research associate at the Scripps Research Institute in California from 2002 to 2006. He returned to Israel in 2007, joining Ben-Gurion University’s faculty before being recruited in 2015 by Technion’s Schulich Faculty of Chemistry as a Neubauer professor.

Brik is well known for his contributions to the development of chemical approaches to prepare posttranslationally modified proteins for biochemical, biophysical and functional analyses. In particular his group has developed chemical methods to prepare ubiquitin-based conjugates, which opened the door for several studies that were not previously feasible.

MY TECHNION
“The university has an excellent environment for my type of research.”

Brik is an elected member of the Israel Young Academy of Sciences, and recipient of the ERC Advanced Grant. He has over 120 publications in top journals, holds several patents, and has received numerous prestigious awards. He is 45, lives in Haifa and has two children.

Asst. Prof. Ido Kaminer
ANDREW AND ERNA VITERBI FACULTY OF ELECTRICAL ENGINEERING

Ido Kaminer joined Technion as an assistant professor and an Azrieli Faculty Fellow in 2018, when he returned to Israel after a postdoc at MIT. He currently holds the Technion’s Jacques Lewiner Career Advancement Chair.

MY TECHNION
“One major reason that brought me to Technion was the decision to invest in an ultrafast transmission electron microscope. This facility is unique in Israel and one of only a few in the world, enabling powerful research capabilities.”

Prof. Kaminer’s research on applications of quantum mechanics and quantum electrodynamics applies ideas from the field of light-matter interactions to nanophotonics with 2D material platforms. His group is developing new microscopy techniques in novel materials using ultrafast lasers and electron microscopes.

During his PhD studies at Technion, Prof. Kaminer discovered new classes of accelerating beams in nonlinear optics and electromagnetism, for which he received the 2012 Israel Physical Society Prize and the 2014 APS Award for Outstanding Doctoral Dissertation in Laser Science.

Kaminer, 33, lives in a faculty apartment on the Technion campus. He has wide interests including sports, traveling, hiking, and the history of Israel and Judaism.
Assoc. Prof. Moran Bercovici
FACULTY OF MECHANICAL ENGINEERING

Moran Bercovici, associate professor of analytical chemistry at Technion, is one of three outstanding recipients of the 2019 Blavatnik Israel Award for Young Scientists. He was recognized for developing novel microfluidic technologies for microscale manipulations of fluids and molecules.

A central theme in Prof. Bercovici’s lab has been the development of new microfluidic devices and assays. His current focus is on exploring physical mechanisms for the development of highly configurable microfluidic devices. He and his team demonstrated the ability to control flow patterns using surface chemistry, field effect electrodes or temperature gradients, all without the use of physical walls. Prof. Bercovici joined Technion in 2011, following his postdoc at the Stanford University School of Medicine.

MY TECHNION
“I was actively recruited by Prof. Pini Bar-Yoseph, who was then-dean of the Faculty of Mechanical Engineering, and by Dist. Prof. Moti Segev, who convinced me that one can conduct research at Technion that is comparable to or better than any top US universities. Both believed in me way before I believed in myself.”

Bercovici, 36, lives in Haifa with his wife and two daughters. In addition to research, he also enjoys playing the saxophone.

Asst. Prof. Adi Radian
FACULTY OF CIVIL AND ENVIRONMENTAL ENGINEERING

Adi Radian is an environmental chemist who, during her post-doctoral fellowship at the University of Minnesota, designed encapsulation matrices for bacteria in order to improve bioremediation technologies. She joined Technion in 2016 as an assistant professor.

MY TECHNION
“I chose Technion mainly for the high quality of students, the available facilities and funds for young scientists – and, of course, for it being in Israel.”

Today, Prof. Radian heads a lab which studies the fate of pollutants in the environment and the development of comprehensive and sustainable soil and water remediation solutions. Her team also designs and applies clay minerals and metal oxides as catalytic surfaces to improve and develop remediation technologies. Their work alongside Prof. Ayelet Fishman from the Faculty of Biotechnology and Food Engineering has resulted in a provisional patent that hopefully will become applicable in the future.

Aside from conducting research, Prof. Radian also finds her role as a mentor and lecturer to be very important and fulfilling. “I am devoted to my teaching and feel I can make a real difference through my work in the classroom,” she says. This year, she received a teaching excellence award for her “Introduction to Soil Chemistry” course.

Radian lives in Kiryat Tivon with her husband Oren and their three young sons, aged 6, 4 and 2.
Yael Yaniv

FACULTY OF BIOMEDICAL ENGINEERING

Yael Yaniv joined Technion’s Faculty of Biomedical Engineering as assistant professor in March 2014, following a postdoc and research fellowship at the National Institute on Aging–National Institutes of Health in the U.S. She received her BSc, MSc and PhD degrees from Technion.

MY TECHNION

“I joined Technion’s faculty because if you want to be the best you must join the best!”

Prof. Yaniv’s research focuses on two main objectives: understanding the molecular mechanisms that control heart rate dynamics and developing algorithms to identify changes in heartbeat dynamics in a time window that will allow prediction of future cardiac events or provide treatment in the early stages of a disease.

When using the current methods to quantify changes in heartbeat dynamics, it is too late to provide a treatment to reverse the heart condition. In the last five years, Prof. Yaniv’s lab has discovered that both Ca2+ and phosphate ions control heart rate dynamics; used computational work that led to two pharmacological approaches and one gene manipulation method to restore the beating rate of aged heart pacemaker cells to that of normal adult cells; and developed algorithms to predict fatal arrhythmias.

Yaniv, 38, is married and has a baby daughter.

Asst.Prof. Shay Hacohen-Gourgy

FACULTY OF PHYSICS

Shay Hacohen-Gourgy is an experimental physicist who joined Technion in 2017 after a postdoc at UC Berkeley.

MY TECHNION

“I wanted to join Technion as it educates high-quality students and hosts high-quality fabrication infrastructure, which are important for building a successful lab and research group.”

Prof. Hacohen-Gourgy works on quantum circuits built from superconducting materials. His most substantial achievement has been demonstrating a simultaneous measurement of non-commuting observables. The dynamics of such a measurement had been an open experimental problem until this demonstration, which was published in Nature and opened a path for a wide array of new capabilities for quantum systems.

He has also been active with small-scale quantum simulators as tools to better understand certain physical models. In particular, he was involved in an emulation of a three-site one-dimensional Bose-Hubbard lattice with attractive on-site interactions, showing that selected states can actively be stabilized – an important feat for future quantum simulators and quantum annealers. Recently, Prof. Hacohen-Gourgy has been working on using machine learning to aid in measurement and control of quantum systems.

Hacohen-Gourgy, 38, lives in Nofit with his wife and two daughters.
Asst. Prof. Yaron Fuchs  
FACULTY OF BIOLOGY

After completing his PhD at Technion and his postdoc in the U.S., Yaron Fuchs returned to Israel in 2014 as an assistant professor at Technion’s Faculty of Biology, where he heads the Laboratory of Stem Cell Biology and Regenerative Medicine.

MY TECHNION
“I returned to Technion as I deeply love this institute. I think the level of science here is truly phenomenal and as Technion is solely dedicated to science and technology, it represents a unique environment that nourishes interdiscipli

collarations.”

Fuchs has had a long-term interest in different modes of cell death and how they regulate diverse aspects of stem cell biology and stem cell-dependent processes. Fuchs and his team discovered that by manipulating the process of stem cell suicide, they can dramatically accelerate the wound repair process in both the skin and intestine. In addition, they have been able to find a potential new cure for melanoma, generate different organs in the dish, and unearth novel stem cell populations.

Fuchs, who is 40, has received more than 20 awards for his scientific excellence and his unique teaching style, including the Wolf Foundation Krill Award and the American Association for Advancement of Science (AAAS) Sartorius and Science Grand Prize for Regenerative Medicine and Cell Therapy. He lives in Haifa with his wife and two children.

Asst. Prof. Oksana Stalnov  
FACULTY OF AEROSPACE ENGINEERING

Oksana Stalnov was born in Minsk, Belarus, and her family immigrated to Israel when she was 11, settling in Kiryat Gat. She received her MSc and PhD degrees in Mechanical Engineering from Tel Aviv University, and in 2012 was appointed a research fellow at the University of Southampton, England. In 2017 she returned to Israel and joined Technion as an assistant professor in the Faculty of Aerospace Engineering.

MY TECHNION
“The Faculty is world renowned in the field of Aerospace Engineering, and Technion offered me the opportunity to establish a state-of-the-art research group.”

At the heart of her research is the question of how noise is generated when unsteady flow interacts with a blade, where many complex phenomena take place within the boundary layer, and how this knowledge can be used to enhance performance. She is developing new diagnostic tools and modelling techniques, which will enable a step change in the understanding of noise generation mechanisms and the development of advanced flow and noise control strategies.

Stalnov, 39, lives in Haifa with her husband, 7-year-old son and 2.5-year-old daughter.
Building the Campus of the Future 2009 - 2019

Strategic Goal:

NEW CONSTRUCTION / RENOVATION

   Completion of 4th floor (2016)
   and Community Center (2015)
4. Senate Building – Senate Hall renovation (2012)
5. Undergraduate Student Village (2016)
9. Southern Palm Beach Chapter Expansion of the Fried Student Counselling Center (2017)
12. Taub Family Terrace (2018)
13. Ullmann Teaching Center – additional floor, structural reinforcement, sheltered areas and elevators (2018)
15. Susan and David Wilstein Gate and Clara Franziska Mertens Gate (2019)

BUILDINGS UNDER CONSTRUCTION

17. Amos Horev Sports Arena

RENOVATION PROJECTS UNDERWAY

Technion Strategic Master Plan for Physical Development

General Campus
- Upgrading all dormitories
- Major renovations in Canada Village and Rifkin Dormitories
- Upgrading infrastructure throughout campus, including A/C and water-saving systems
- Campus safety upgrades, including fire prevention zone
- Making campus facilities accessible for disabled individuals: improving accessibility both inside buildings and in outdoor areas

Faculties
- Schulich Faculty of Chemistry: labs, teaching facilities, library, infrastructure
- Rappaport Faculty of Medicine
- Wolfson Faculty of Chemical Engineering
- Renovating and adding labs in all faculties
MOUNT CARMEL CAMPUS

Faculties, Facilities & Administration

Student Residences

Gates
We are at the cusp of a sweeping evolution, if not an outright revolution. Not long ago, we only had chalkboards, books and notebooks, but the modern digital age generated MOOCs, flipped classrooms, video lectures, project-based learning and peer instruction.

Thanks to technological and pedagogical innovations, education is rapidly becoming more personalized. We are witnessing a transition to innovative, non-traditional forms of learning that promote student involvement through hands-on experience. The learning environment is becoming 24/7, with greater flexibility, customization and real-time engagement.

At Technion, these changes are being spearheaded by the Technion Center for Promotion of Learning and Teaching. “Technion is a leader in academic education, encouraging pedagogical innovations and promoting state-of-the-art instructional methods as role models for other universities,” notes Dr. Abigail Barzilai, who heads the Center.

**FROM A SAGE ON THE STAGE TO A GUIDE ON THE SIDE**

In a digital learning environment, courses will be customized to the unique needs of individual students. “Education is going to be personalized and we are in the process of adapting new instructional methods to meet the students’ needs,” reveals Assoc. Prof. Miri Barak, Head of the Science and Learning Technologies group in the Faculty of Education in Science and Technology, adding that, “Teaching is shifting from lectures to small group settings – from a sage on the stage to a guide on the side.”

Indeed, globalization and accelerated technological development require a rethinking of teaching and learning processes in 21st century higher education. In the past, only the lecturers had access to new information, but today web and cloud technologies connect students to a pipeline of infinite information and they can share knowledge with people from all over the world. Since students perceive classroom lectures as anachronistic, meaningful learning must occur in new ways.

**UNIVERSITY OF THE FUTURE**

Universities must adapt in order to thrive. Technion is **reinventing educational paradigms in order to empower future generations.**

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“Education is going to be personalized. We are adapting the methods to the students.”

- Assoc. Prof. Miri Barak
One of the trends that will accelerate in the near future is the transition from large lectures to small groups. Project-based learning will be widespread: students will work mainly in groups, often in collaboration with peers from all over the world and with the private sector.

Another learning model that is gaining steam is the ‘flipped classroom,’ where students learn theoretical aspects at home and come to class for the purpose of deeper discussions and solving problems in small groups. Today, it is easier for many young people to watch lectures online at their own pace and in their own free time, rather than in a classroom. Technion’s newly renovated Ullmann Building includes innovative classrooms specifically designed to meet the needs of these new teaching styles.

THE HUMAN FACTOR
Despite technology’s expanding role in the classroom, the human factor will continue to be important. Teachers will focus on imparting skills at a high level and will provide added value to their students.

Students will learn more “soft skills” such as entrepreneurial thinking, interpersonal communications, ethics, multiculturalism and creativity, as well as adapting to interdisciplinary learning and working in teams.

THE MOOC GENERATION
MOOCs – Massive Open Online Courses – epitomize the future of education and, as such, their popularity is growing exponentially. In Israel, Technion is a leader in this field, heading a consortium of seven Israeli universities that produce MOOCs in basic Math and Computer Science on behalf of the Council for Higher Education. Of the 15 MOOCs produced in Israel in these fields, seven are Technion courses. In order to keep up with the growing demand for MOOCs, as well as the increasingly professional and sophisticated production of these courses, universities need professional studios.

Prof. Barak predicts that universities that are top suppliers of MOOCs will become tomorrow’s top universities. As more courses are available online, universities will increasingly shift resources to offering educational support through direct mentorship and hands-on experience. Preparatory courses at Technion – such as Physics, Chemistry and Math – are already available online. In the future, most introductory-level courses and enrichment courses in the humanities will be digital. Dr. Barzilai expects that within five years virtual and augmented reality will be common in the classroom and will enrich learning.

At the epicenter of educational innovation, Technion continues to be a pedagogical and technological leader attuned to the needs of tomorrow.
One of the goals set a decade ago was to recognize excellence in teaching.

To this end, the Yanai Prize for Excellence in Academic Education was launched eight years ago together with Moshe Yanai, a Technion alumnus and global pioneer in the field of information storage. Yanai, together with his wife Rachel, sought to give back to Technion in gratitude for the life skills that he gained during his studies nearly 50 years ago. He contributed $10 million to reward lecturers who demonstrate teaching excellence. The prize he endowed awards 100,000 shekels to each recipient.

The prize is awarded in appreciation for faculty members who set an example through their valuable contributions to teaching, and who strive to improve student involvement and sense of belonging to Technion. By honoring faculty, who are not only excellent researchers but also outstanding lecturers, the Yanai Prize sends a clear message that teaching quality is supremely important.

Since it was established, 69 professors have received the Yanai Prize, including five this year.

"The main reward is not prestige and money but your opportunity to change and influence people’s lives"

-Moshe Yanai
Congratulations to this year’s winners!

**Assoc. Prof. Daniel Orenstein**  
*Faculty of Architecture and Town Planning*  
"My students receive a solid knowledge base that enables them to critically evaluate and understand the factors that affect the main environmental challenges of our generation. They learn to acquire many different types of knowledge, from academic textbooks and literature, from the cumulative experience of experts, from people’s everyday lives, and from the students’ own life experiences.”

**Assoc. Prof. Adi Salzberg**  
*Rappaport Faculty of Medicine*  
"I demand a high degree of investment from my students, so that they will have a high level of knowledge and understanding, but at the same time I demand the same from myself. I invest a great deal of time and energy in frontal instruction and I spend many hours preparing my course. Furthermore, I spend a lot of time in personal meetings with students.”

**Assoc. Prof. Keren Censor-Hillel**  
*Faculty of Computer Science*  
“Although the main goal of teaching is to convey the material on the syllabus, I aspire to expand the students’ horizons and therefore I encourage them to gain research experience. I believe in active learning. The website Socrative.com is an important tool for me; it enables students to choose answers to problems that I ask them. I also use other interactive tools in order to make the material more accessible to the students.”

**Assoc. Prof. Daniella Raveh**  
*Faculty of Aerospace Engineering*  
“I view training students as my foremost responsibility as a faculty member. I believe that my unique contribution to teaching comes from working with students in various frameworks and through continuous interaction, as well as by being available to listen and give advice. I am especially proud of my contribution as an advisor for student research projects and experiments.”

**Assoc. Prof. Avi Schroeder**  
*Wolfson Faculty of Chemical Engineering*  
“I developed a teaching method based on ‘individually adapted teaching’ – a way of learning whereby each subject is studied from several different angles, in complete cooperation with the students. This multi-dimensional view enables the students to express their aptitudes while acquiring an in-depth understanding of the subject in question. As a Technion professor, I feel it is an honor to be an active partner together with the students in building their skills and their professional futures.”

**HONORABLE MENTIONS:**  
The Yanai Excellence in Teaching Prize was awarded to Assoc. Prof. Roee Amit of the Faculty of Biotechnology and Food Engineering, Assoc. Prof. Yael Yaniv of the Faculty of Biomedical Engineering, and Asst. Prof. Roi Reichart of the Davidson Faculty of Industrial Engineering and Management.

**Andrew and Erna Viterbi Faculty of Electrical Engineering**  
The faculty received the Yanai Prize this year as a result of its continuous improvement in teaching scores and the many personal prizes awarded to both senior and junior faculty in recent years. The Faculty has established an extensive support network for students in order to respond effectively to all problems that arise during their studies. The Faculty works with student representatives to improve the student experience, nurture a pleasant social atmosphere, discuss changes in the curricula, plan the class and exam schedules, and balance the student work load.
**ARTIFICIAL INTELLIGENCE**

**Hardware: 1000x Faster**

A team led by Asst. Prof. Shahar Kvatinsky at the Viterbi Faculty of Electrical Engineering has developed hardware for machine learning that is much faster than regular graphic processor units, yet requires much less energy.

Most artificial intelligence applications rely on computers that run programs using mathematical models whose processing capabilities are insufficient. In order to accelerate the computation and reduce the energy, Prof. Kvatinsky’s team uses novel nano-scale devices called memristors to support deep neural networks using one of the most popular learning techniques – gradient descent with momentum.

The research team developed a dedicated hardware based on memristors that is 1,000 times faster than GPUs, while using seven times less energy.

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**IMAGING**

**Improved Brain Scans**

An interdisciplinary research team at Technion has developed nanometric particles that will improve the quality of brain scans by combining MRIs and light microscope photography.

The team from the Russell Berrie Nanotechnology Institute is led by Assoc. Prof. Lilac Amirav from the Schulich Faculty of Chemistry, together with Dr. Shai Berlin and Prof. Itamar Kahn from the Rappaport Faculty of Medicine.

The problem with MRIs is that they don’t provide high enough resolutions at the level of a single cell. Light microscopy, on the other hand, is able to show single cells, but it requires that the tissue be penetrated.

The nanometric particles developed at Technion are effective markers in that they are visible in both MRI scans and light microscopes, and they can navigate within the cells.
Regenerating Damaged Tissues

Prof. Shulamit Levenberg of the Faculty of Biomedical Engineering and her team have brought successful tissue engineering a step closer, paving the way for superior methods of replacing damaged human tissue.

The field of tissue engineering involves taking cells from the body and incorporating them with very porous scaffold biomaterials, which act as 3D templates that guide the growth of new tissue.

Prof. Levenberg and her team found that the most mature grafts with complex vessel networks increased graft-host vessel anastomosis and improved penetration of the vessels in the recipient. The less-mature vessels were less successful in combining with the host tissue and caused more clots to be formed.

World’s 1st Quantum Metamaterials

Two teams of Technion scientists have collaborated to conduct trailblazing research which is leading to the development of a new and innovative scientific field: Quantum Metamaterials. The study was jointly conducted by Dist. Prof. Moti Segev, of the Physics Faculty, and his team, Tomer Stav and Dikla Oren, in collaboration with Prof. Erez Hasman of the Faculty of Mechanical Engineering and his team, Arkady Faerman, Ethanan Maguid, and Dr. Vladimir Kleiner.

The research demonstrates that it is possible to apply metamaterials to the field of quantum information and computing, thereby paving the way for numerous practical applications, such as the development of unbreakable encryptions, and new possibilities for quantum information systems on a chip.

“Immune Age”: An Accurate Measure of Health

A team of Technion researchers led by Assoc. Prof. Shai Shen-Orr in collaboration with Stanford University, have found that the state of our immune system provides a more accurate measurement of health.

The team has developed a way to gauge “immune age,” which may push the limits of personalized medical treatment, drug and vaccine clinical development, and health management. “Unlike your actual chronological age, your immune-age is directly linked to the state of your immune system, the body’s chief sentinel. We can therefore capture medically relevant information using immune age that physicians would otherwise miss,” explains Shen-Orr.
CT Scans for Clouds Will Improve Climate Prediction

Inspired by medical CT scans, a space mission consisting of tiny satellites will reveal detailed images of cloud structures and properties, and may resolve some major uncertainties that limit current climate prediction.

The project, which was recently awarded €14 million by the European Research Council Synergy program, is led by Prof. Yoav Schechner of the Viterbi Faculty of Electrical Engineering, an expert in computer vision and computed tomography, along with Prof. Ilan Koren from the Weizmann Institute of Science and Prof. Klaus Schilling of the Center for Telematics in Würzburg, Germany. In analogy to the better-known medical CT, images will be taken simultaneously from many directions around and above the clouds. This feat will be made possible by the networked self-organizing formation of multiple, inexpensive, small satellites.

Chronic Use of β-Blockers Found to Increase the Risk of Parkinson's Disease

A new study led by Visiting Prof. Kira Radinsky of the Computer Science Faculty indicates that chronic use of β-blockers confers a time- and dose-dependent increased risk for Parkinson’s disease.

Prof. Radinsky and her team used Maccabi Health Services electronic charts to identify all patients receiving their first β-blocker treatment. They calculated the morbidity hazard of Parkinson’s disease diagnosis in users of β-blockers compared with non-users, as well as users of angiotensin-converting enzyme (ACE) inhibitors for hypertension. The adjusted hazard ratio for Parkinson’s disease among β-blocker users was 1.51. In contrast, the Parkinson’s disease morbidity hazard for patients receiving ACE inhibitors was no different than for the general population.
Revolutionizing Information Processing

Technion researchers have succeeded in generating minute “nano-hedgehogs of light” called optical skyrmions, which could make possible revolutionary advances in information processing, transfer and storage. The research, published in Science, was led by Assoc. Prof. Guy Bartal of the Viterbi Faculty of Electrical Engineering and Assoc. Prof. Netanel Lindner of the Physics Faculty.

The researchers demonstrated that an electric field can take on a “skyrmion” shape and that these “light hedgehogs” are robust against various defects in the material hosting the electromagnetic waves. The new discovery could enable future replication of this unique effect in a wide range of systems and materials, including liquids, nanoparticle systems and even cold atomic gases. It might also lay the ground for new skyrmion applications in optical (rather than magnetic) information processing, transfer and storage.

Innovative System Predicts the Effectiveness of Antibiotic Cocktails

Researchers at the Faculty of Biology discovered an innovative system for measuring the effectiveness of “antibiotic cocktails” and proved that the variety of drugs in the cocktail has a much larger impact than their dosages.

The research was led by Prof. Roy Kishony of the Faculties of Biology and Computer Science, and his findings were recently published in the journal Nature Microbiology. Prof. Kishony’s team developed a system that automatically and precisely measures the effect of different antibiotic cocktails on bacteria. They found that the larger the number of different antibiotics in the cocktail, the lower the doses required of each antibiotic without reducing the cocktail’s effectiveness.

Revealing the Therapeutic Promise of Programmed Cell Death

Asst. Prof. Yaron Fuchs from the Faculty of Biology is the 2019 grand prize winner of the Sartorius and Science Prize for Regenerative Medicine and Cell Therapy, for work that reveals a role for programmed stem cell death in wound healing and tissue regeneration.

The findings, described in his prize-winning essay, “The therapeutic promise of apoptosis,” could potentially pave the way to novel regenerative medicine and tumor therapies that target stem cells undergoing apoptosis – a type of programmed cell death. Prof. Fuchs heads the Laboratory of Stem Cell Biology and Regenerative Medicine.
Technion’s newly inaugurated Center for Machine Learning and Intelligent Systems is set to become a hub of creativity and research that will benefit the scientific and medical communities, and industry.

Technion has succeeded in building a strong world-class AI group, with more than 20 faculty members carrying out first-rate theoretical and applied research. The new Center for Machine Learning and Intelligent Systems that was recently inaugurated will maintain Technion’s position as one of the top universities worldwide in both the research and teaching of intelligent systems.

Prof. Shie Mannor of the Andrew and Erna Viterbi Faculty of Electrical Engineering heads the new AI Center. Prof. Mannor is an associate editor of the Journal of Machine Learning Research, Operations Research and Math of Operations Research, and held the Canada Research Chair in Machine Learning between 2005-2009 while on the faculty of McGill University.

By promoting both pure and applied research in machine learning, the Center serves as a bridge between academia and Israeli and global high-tech industries. It will educate hundreds of scientists and engineers and train researchers specializing in data science and machine
learning, as well as attracting leading researchers from all over the world, and hosting industry and medical experts.

The Center provides a holistic multidisciplinary approach to the investigation of complex problems such as the application of machine learning in personalized treatment of cancer. Its scope includes defense and homeland security, agritech, home and industrial robots, health and medicine, smart environments, fintech, and autonomous vehicles.

Technion's goal in establishing the Center is to leverage its multidisciplinary experience and expertise in fields such as data, information and computer sciences; control theory; automation and robotics; statistics and complex systems; neurosciences and more, in order to address relevant challenges in artificial intelligence and machine learning science.

As a leader in this field, Technion plays a key role in the country's efforts to maintain and enhance the qualitative edge in science and technology that is vital to its security and economy.

Technion is well positioned to enhance its many existing research relationships with Israeli industry leaders and global companies and to expand its range of partnerships in areas that relate to the new Center. In this context, Technion has already established close ties with Intel, Bank Hapoalim, Hyundai and other companies.

**PARTNERSHIP WITH INTEL**

The new AI Center enjoys especially close ties with Intel, the multinational semiconductor giant. Intel has had a strong relationship with Technion for years, and it is a partner in the new Center. "As part of this collaboration with Intel, the company supports research projects of Technion faculty members engaged in computational learning and artificial intelligence together with Intel researchers. The research covers a variety of areas, including natural language processing, deep learning and hardware optimization for different learning algorithms," Mannor explains.

"We are proud of the cooperation with Technion, which will promote Israeli technology and Intel’s technological leadership in the field of artificial intelligence," Intel Israel CEO Yaniv Garty said at the inauguration ceremony.

"The new Center is a one-stop-shop. Now we can work with much larger companies with complex needs."

- Prof. Shie Mannor
IMAGINE, INVENT, INNOVATE

THE QUANTUM IMPERATIVE

STRATEGIC GOAL:
PIONEERING THE EDGE OF SCIENTIFIC DISCOVERY
Last June, Technion announced a $50 million gift from the Helen Diller Family Foundation to support a new state-of-the-art quantum center. Thanks to this gift, Technion is poised to be a world leader in one of the 21st century’s most important fields of science and technology.

The Helen Diller Center for Quantum Science, Matter and Engineering is headed by Dist. Prof. Moti Segev and Prof. Gadi Eisenstein. Prof. Segev is the Robert J. Shillman Distinguished Professor of Physics. Prof. Eisenstein holds the Mark and Diane Seiden Chair in Optoelectronics and is the director of the Russell Berrie Nanotechnology Institute (RBNI).

There are more than 30 faculty members engaged in quantum-related research. The grant from the Helen Diller Family Foundation will enable Technion to recruit ten new faculty members between 2018 and 2028.

Notable research breakthroughs include:

- The first-ever topological insulator laser - Prof. Moti Segev
- The most advanced single and entangled photon generating technique - Prof. David Gershoni
- Metamaterial-based quantum manipulation - Prof. Erez Hasman and Prof. Moti Segev
- Advanced opto-atomic clocks - Prof. Gadi Eisenstein

An Ultrafast Transmission Electron Microscope facility, the only such system in Israel and one of a handful worldwide, will be inaugurated in 2019. In this system, the electron beam is pulsed – synchronized with an ultrafast optical pulse. It is used for quantum electrodynamic experiments and other ultrafast quantum phenomena.

In November 2019, an important symposium organized jointly by Technion and the newly formed Munich Quantum Center (which includes Ludwig Maximilian University, the Technical University of Munich, the Max Planck Institute and the Deutsche Museum) will take place at the Max Planck Institute in Garching near Munich.
Christine Khoury, 26, PhD  
Grand Technion Energy Program (GTEP)

“I was born in a small village in Lebanon, and when I was seven, my family moved to Israel. In 2011, I started my studies at the Wolfson Faculty of Chemical Engineering and completed my BSc summa cum laude. Technion provided me with a lot of intellectual challenges as well as allowing me to learn important skills such as working in a team and self-learning. My research topic is the ‘Transformation of Biomass-Derived Molecules to Fuels and Chemicals Using Cooperative Catalysis.’ As part of my research, I am trying to accelerate environmentally-friendly reactions by designing and synthesizing new materials. In the future, I plan to work in R&D, using my skills to improve the yield of chemical processes and suggesting sustainable alternatives to existing energy-intensive processes.”

STUDENT MOSAIC

STATEGIC GOAL:
A THRIVING CAMPUS

Technion’s student body is more diverse than ever – with more women, minorities and international students than ever before.

Joseph Rodriguez, 21, BSc  
Civil Engineering, Technion International

“I grew up in Ecuador and I am proud to be a Technion student in Civil Engineering. I aim to someday work in the ever-growing construction industry. When I was younger, I had the opportunity to live in Tel Aviv with my family due to my Dad’s work. After experiencing life in Israel for a year, I knew it wasn’t going to be my last time here. I found in Technion the school that allowed me to fulfill my dream of both living in Israel and getting a top-level education. Throughout the past three years, this school has helped me reach my academic potential, learn from professors whom I admire, and make lifelong friendships. In my free time, I enjoy reading and playing sports such as soccer, tennis and chess.”
Roni Anna Gofman, 25, MSc  
Astrophysics

“I was raised in Tel Aviv and in high school I was the captain of my school’s FIRST robotics team. I have volunteered in this program ever since. After serving in the IDF as an artillery instructor, I moved to Haifa to study physics at Technion. I’m currently doing a Master’s degree in the Physics Faculty with Prof. Noam Soker as my advisor. My research involves theoretical work in the field of Astrophysics. In my Master’s thesis, I hope to provide a theoretical model for a peculiar supernova that was detected in 2014. As a daughter of Technion alumni, I always knew that I would study here. The things I like most about Technion are the people and the atmosphere. I enjoy being surrounded by successful, interesting and excellent people. I like the fact that everyone’s main goal here is to learn and understand more.”

Boris Levin, 25, BArch  
Architecture and Town Planning

“I was born in Saint Petersburg and when I was 16 I decided that I would make Aliyah and study at Technion to become an architect. I live in a dorm on campus and am considered a new immigrant, alone in the country. The most challenging thing for students in the Faculty of Architecture, I think, is a never-ending necessity to be creative, especially under the stress of a huge number of courses, projects and presentations. Nevertheless, I do love my studies and try to appreciate everything that we have an opportunity to learn here. I believe that the technological approach and the deep research in topics such as urbanism, green architecture and innovative infrastructure may be the answer to making our world a better place. Technion is the very best place in Israel which can provide this sort of knowledge at the highest level.”

Yehuda Sabiner, 28, MD  
Medicine

“I grew up in Jerusalem in a family of Gur Hassidim. I live in Bnei Brak with my wife and three children. I established an organization called ‘Haredim in Medicine’ to help integrate Haredi men and women into medical studies in Israel. I was attracted to this field since childhood, and for many years I volunteered with Magen David Adom. I am completing my sixth year at Technion and plan to specialize in internal medicine or pediatrics. My biggest challenge was having to acquire pre-academic education when I was 20. I joined the first cohort of the Technion program designed to prepare Haredi students for academic studies. What I love about Technion is that it is a superb institution that leads in developing the country in every field – and always for the most noble reasons.”

Rotem Dror, 30, PhD  
Natural Language Processing

“I am half-way through my doctoral studies in natural language processing at the Davidson Faculty of Industrial Engineering and Management. I am one of 57 students from all over the world who was awarded a Google Fellowship this year. I have spent my entire academic career at Technion. My research focuses on developing structured prediction algorithms for natural language processing applications. I love to teach and my dream is to pursue a career in academia. I live in the Stanley Shalom Zieleny Graduate Student Village with my husband and young daughter. I love Technion. I was surprised that Technion chose me for the Google Fellowship competition. The Fellowship is a vote of confidence. It’s a serious boost to my motivation.”
hanks to Technion’s diligent Students Association, students not only enjoy a rich selection of extracurricular activities and cultural events; they also benefit from a support network that helps them cope with the academic challenges. Under the leadership of Students Association Chair Amir David Nissan-Cohen, a Computer Science Master’s student, and Graduate Students Chair Asaf Hershkovitz, a PhD student in Materials Engineering, the organization is busier than ever.

One of the Students Association projects that gained steam this year involves graduate students helping undergrads with their coursework. The Students Association also organizes approximately 40 workshops each semester for students who feel that they are behind in their course material, and 40 more prior to final exams. Each workshop is 20 hours long and heavily subsidized.

This year, the Technion Students Association [TSA] launched a new joint effort with the Center for Promotion of Learning and Teaching whose goal is to improve the quality of teaching at Technion. The Association is involved in training teaching assistants, advocating for more filmed courses, and processing student feedback on teaching quality and content.

PARTIES, SPORTS AND MORE

In addition to providing academic support, TSA ensures that Technion students have access to a wide array of extracurricular activities and cultural events throughout the year. The 4,000 tickets to each of their four annual mega parties usually sell out fast, and the two-day Student Festival held every May attracts 18,000 people a day, making it the largest of its kind in Israel. Moreover, on Wednesdays from 12:30 to 14:30 there are no classes on campus and during that time the Students Association hosts a different event every week, such as a concert or crafts fair. “But every day there is something going on,” reveals Nissan-Cohen, adding that TSA runs 36 different competitive sports teams, some of which are quite successful. Over 3,000 students take part in sports.

Nissan-Cohen also stresses the importance of volunteering and community
outreach. Every two weeks, a busload of students participates in a voluntary activity such as helping in local hospitals, painting apartments for elderly people or cleaning up litter from the beach. Another project involves the collection of old computers and other equipment, which students overhaul and then donate to NGO’s or disadvantaged students.

Other projects that the Association initiated this year include opening a Gymboree for children and building a music room where students can practice and record. Moreover, it organized the first Technion-wide hackathon, in collaboration with the private sector. Over 650 students participated in the 30-hour hackathon – the biggest held in Israel.

**1/3 GRAD STUDENTS**

One out of every three Technion students is working towards an MSc or PhD, and this large cohort has very different needs and priorities from undergrads. “They are generally at a later stage in life; many are married and have children; and they have different cultural interests than younger students,” points out Asaf Hershkovitz. Many live in the Graduate Student Village, which Hershkovitz describes as “one of the nicest neighborhoods in all of Israel.” The Students Association has improved the amenities at the Village, adding facilities such as a laundry room and outdoor exercise machines.

Special programs organized for graduate students include cooking workshops, plays and concerts, and subsidized meals for graduate students at campus eateries. There are activities for their children, such as the annual kid’s carnival at the end of the summer vacation.

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The secret of genius is to carry the spirit of the child into old age, which means never losing your enthusiasm.

- Aldous Huxley

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This year’s Technion Race, part of the 5th Technion Challenge that included a variety of sports competitions.
The Israeli Olympic Sports Research Center was launched this year, headed by Prof. Alon Wolf, to leverage Technion ingenuity for the benefit of the Israeli Olympic team.

Hodaya Oliel (center), who has cerebral palsy and recently graduated from Technion’s Rappaport School of Medicine, was honored with lighting one of the 12 torches at this year’s official Independence Day ceremony in Jerusalem.
Students from the Rappaport Faculty of Medicine who are members of "Ruach Tova," Israel’s first student-run community health center offering services to those in need, free-of-charge. The center is headed by Prof. Ruti Margalit (Back row, 3rd from left).
TIKUN OLAM*

T3 has been instrumental in birthing many outstanding success stories which directly contributed to making the world a better place.

STRATEGIC GOAL:
ADVANCING SCIENCE AND HUMANKIND

T3 TECHNION TECHNOLOGY TRANSFER

T3 has been instrumental in birthing many outstanding success stories which directly contributed to making the world a better place.

T3’s new Managing Director, Rona Samler, sees T3’s role as both active and proactive: “Our ability to streamline the commercialization process, making Technion innovation accessible in a dynamic and changing environment, is fundamental,” she says, adding that, “The holistic approach means we are active and proactive partners in promoting applications of high-quality science. This is in relation to both Technion faculty and to industry.”

The Technion has tools to support and invest in these companies, from pre-seed through follow-up investments in designated funds, including the DRIVE accelerator, AMIT’s biomedical venture and The Technion Investment Opportunity Fund.

Here are some examples of how the commercialization of Technion discoveries has had a far-reaching impact, actively contributing to ‘Tikun Olam’:

* “healing the world” - a central value in Judaism that espouses benefiting humanity

*healing the world* - a central value in Judaism that espouses benefiting humanity
Sealantis

Based on Technion technology, Sealantis develops medical adhesives which mimic the mechanism of algae adhering to rocks in water and which have much lower risks of infection or allergy. The company was sold in January 2019 for US$25 million to Advanced Medical Solutions Group from England. Sealantis was established under the auspices of the Alfred Mann Institute at Technion (AMIT), under the leadership of Prof. Havazelet Bianco-Peled, a world renowned expert in biomedical polymers, from the Wolfson Faculty of Chemical Engineering.
Technion-born Mazor Robotics sells for a record $1.6B

The biggest health tech exit in Israel’s history
Mazor Robotics

In the largest ever ‘exit’ of an Israeli biotech company, Mazor Robotics – a pioneering developer of robotic systems for spine and brain surgery, founded at Technion – was bought in September 2018 by Irish-American medical device company Medtronic for $1.64 billion. Mazor’s innovative products were originally developed by Prof. Moshe Shoham of the Faculty of Mechanical Engineering. Mazor started out in the Technion Entrepreneurial Incubator Company (TEIC).
Itamar Medical
Itamar Medical Ltd. is a publicly traded company that develops non-invasive medical devices for monitoring sleep and diagnosing sleep disorders based on its proprietary PAT™ technology. This technology was developed in the laboratory of Technion President Prof. Peretz Lavie, who is also one of the company’s founders. Itamar Medical is based in Caesarea and markets the WatchPAT (pictured above) and EndoPAT devices worldwide.

BreezoMeter
BreezoMeter was founded in 2012 by Technion alumni Ran Korber, Ziv Lautman and Emil Fisher. Environmental engineers aware of the connection between health and the environment, they were interested in knowing the quality of the air we breathe in real time. The result is the most accurate air quality application programming interface (API) in the world.

Novocure
In 2000, Prof. Yoram Palti of the Rappaport Faculty of Medicine sought to leverage his expertise in biophysics to develop a new way to treat cancer that would destroy tumor cells while sparing healthy tissue. His research led to the founding of Novocure, which has grown into an international oncology company with more than 495 employees and operations in the U.S., Europe and Asia. The company’s development center remains in Haifa.

Corindus
Corindus Vascular Robotics, Inc. is a global technology leader in robotic-assisted vascular interventions. Prof. Rafi Beyar, Former Director of Rambam Healthcare Campus and former Dean of the Rappaport Faculty of Medicine, co-founded the company. Corindus’ next-generation CorPath GRX System is advancing the field of robotic interventional cardiology, offering improvements in radiation protection for physicians and the potential to reduce radiation exposure for staff and patients.
Technion DRIVE – an accelerator for entrepreneurs who are part of the Technion community and whose start-ups are in the pre-seed or seed stages – is bearing fruit after only 2.5 years.

DRIVE start-ups cover a large range of fields. One company, VineSight, developed an algorithm that identifies fake news and is now gaining traction. Another start-up, NanoSynex, founded by two young Technion alumni who are both new immigrants (from France and Brazil), raised $1.5 million to fund further development of their product: rapid identification of antibiotic resistance. The technology is based on research that was carried out in Prof. Shulamit Levenberg’s lab. BrainVu detects emotions on faces non-invasively and remotely using Technion technology. Last year, it was acquired by Mantis Vision.

Out of the 26 companies in DRIVE’s portfolio, four are based on Technion technologies. The others are by alumni. Companies that are accepted to the program receive up to $100,000, business mentorship, space in DRIVE’s offices on campus and access to Technion labs and resources. The nine-month program provides participating entrepreneurs with assistance in fundraising and finding potential clients, as well as introducing them to a huge network of mentors and investors, many of whom are Technion alumni themselves.

Dr. Shuli Shwartz, DRIVE’s Managing Director, is herself an experienced entrepreneur who founded three ventures and recently co-managed Runway, a start-up incubator program for postdocs at the Jacobs Technion-Cornell Institute in New York (see page 40). She is personally involved with each of the accelerator’s start-ups, customizing the mentorship training of the first-time entrepreneurs and helping with pitching and fund raising, team building, product development and more.
A GLOBAL NETWORK

A core team of Technion faculty members is leading the implementation of the university’s globalization strategy. The goal is to expand Technion presence at major research centers, building heterogenic groups of researchers from different countries, establishing joint research groups among the three Technion global campuses, promoting research in fields of global significance, encouraging faculty mobility and developing student exchange programs that will inspire research collaborations.

Technion International (TI), in its tenth year, serves as the home of the international student community at Technion.

**Undergraduate**
Technion International manages two full degree programs – Civil Engineering and Mechanical Engineering – as well as summer programs and student-exchange programs.

**Technion American Medical School**
Technion’s Ruth and Bruce Rappaport Faculty of Medicine American Medical Program (TeAMS) prepares students for a professional medical career in the U.S., while exposing them to cutting-edge medical research in Israel.

**Graduate students**
Among Technion’s 2,573 MSc students, 185 are considered international students. Of the 1,155 PhD students studying at Technion, 96 are international. In addition, Technion sends graduate students to present their work at international conferences.

**Postdoctoral fellows**
There are currently 231 international postdoctoral fellows at Technion. In addition, Technion sends six students each year to participate in the joint MIT-Technion Postdoctoral Fellowship Program. The Zuckerman Postdoctoral Scholars Program attracts the finest postdoctoral scholars from leading universities in the U.S. to Technion.

**International competitions**
Each year Technion sends teams of undergraduate students to participate in various international competitions.

Technion International (TI) 2018-2019:

- **31 freshmen** enrolled in BSc programs in Civil Engineering and Mechanical Engineering taught in English
- **2** degree programs – in Chemical Engineering and Biotechnology and Food Engineering – are taught in English and are a part of the preparation for the Guangdong-Technion programs
- **169** students currently enrolled in 4 English-language degree programs
- **661** international students hosted at Technion. Among them 62 study-abroad students, and 165 visiting research students
- **191** students in TI summer programs
- **Over 500** students from China and India have taken part in special summer programs
in international competitions, such as Formula Student Challenge, Association for Unmanned Vehicle Systems International (AUVSI), and the International Quarter-Scale Tractor Student Design Competition.

Research collaboration
This year, Technion became the sixth member of the prestigious EuroTech Universities Alliance, a network of top-tier research-based universities known for their scientific excellence and vibrant innovation ecosystems. Close collaboration with the other members of the alliance, an elite group of European universities, will help ensure that Technion remains at the forefront of global scientific research.

Technion is part of the European CESAER consortium, and participates in joint programs such as EIT - European Institute of Innovation & Technology.

MOOCs
This initiative serves to establish a global online presence and as a tool to encourage international collaboration. The total enrollment in Technion MOOCs to date is 81,400.

66 Technion students spent a semester at a partner university in Europe, North America, South America, Australia, and Asia

21 Technion students in the IAESTE summer internship program, where students spend a summer abroad working in their field

15 Erasmus+ cooperation projects submitted to strengthen cooperation with European universities

29 agreements were maintained with foreign medical schools

213 academic collaboration agreements upheld with universities in 41 countries.
At Guangdong Technion-Israel Institute of Technology (GTIIT) in Shantou, China, plans are already underway to expand the campus, programs and student body. Since the current site, known as North Campus, is being fully utilized, a new South Campus is being built across the road. South Campus will be four times as large as North Campus and, altogether, GTIIT is expected to enroll 2,600 students by 2026. The first stage of this four-year project will be ready by July 2020, and will enable GTIIT to open additional academic tracks, in addition to a large library, more dorms and other advanced facilities.

GTIIT currently offers BSc degrees in three tracks: Materials Science and Engineering, Chemical Engineering, and Biotechnology Engineering. It has 22 first-rate faculty members from all over the world and 480 students, 28% of whom are women. Admissions requirements are stringent and comparable to those of Technion’s International School. Applicants must have top grades in their high-school matriculation exams; must be proficient in English; and are required to pass an interview.

In 2017, Technion inaugurated two new campuses outside of Israel – Guangdong Technion-Israel Institute of Technology in China and the Jacobs Technion-Cornell Institute in the United States. Two years later, both campuses are thriving.

“GTIIT is a university full of possibilities. Even though it is difficult, we love this university and we love to study here.”
– Yang Yifan, GTIIT
GTIIT is proud of the fact that 100% of its research funding requests have been accepted. Indeed, its scientists have already received prestigious research grants from competitive research foundations. Moreover, Guangdong’s Provincial Government recently approved GTIIT as one of the province’s four leading universities. As a result of this status, GTIIT was able to apply for $10 million grants for teaching and research in each of four disciplines. GTIIT was also granted the right to participate in the founding of key semi-industrial labs in Guangdong Province. Twenty research proposals were submitted, totaling $80 million in grants.

“GTIIT is a university full of possibilities. Even though it is difficult, we love this university and we love to study here. We are rewarded for our hard work. Our English has improved a lot, our vision has been expanded, and we are starting to think more critically to explore new answers. At GTIIT, we have many opportunities to develop our interests, and campus life is diverse and interesting. We students can join or start a student group according to our own interests. Last year, eight student groups were started, including music, culture and athletics groups. Sometimes we also invite professors to participate in student activities, like watching movies together and sharing books; we can learn different cultures from professors from different countries, and discuss different topics with professors, not limited to our studies.”

-Yang Yifan

Faculty and students at GTIIT North Campus

YANG YIFAN, GTIIT

“I think GTIIT is like a blank canvas, waiting for us to paint a picture on it. We have really good brushes and art teachers, which means high-end equipment and the best professors.”

Yang is a second-year student of Chemical Engineering at GTIIT. He is originally from Guangzhou, Guangdong Province.
The Joan and Irwin Jacobs Technion-Cornell Institute, which was created in 2013 within Cornell Tech as a partnership between Cornell University and Technion, has plans to expand. Located within the new, modern Cornell Tech campus on Roosevelt Island in New York City, the Jacobs Institute currently offers two Technion-Cornell dual Masters degrees, in Connective Media and Health Tech. Students receive degrees from both Cornell and Technion.

This past academic year, a total of 90 students were enrolled in the two Master’s programs, of which about 75% were in Connective Media and 25% in Health Tech. Demand for the current Master’s programs is growing, and the number of applications continues to rise each year. A new Urban Tech hub/degree is expected to be launched in the fall of 2021 and is likely to attract large interest. The Institute now has seven faculty members, including its director, Ron Brachman, who is a professor of Computer Science at Cornell University. Three of the seven are Technion-appointed faculty.

The Jacobs Institute is also home to the Runway Startup Postdoc Program – part business school, part research institution and part start-up incubator. Postdocs arrive with ideas for unproven products and markets that require time and specialized guidance to develop. The program lasts 12–24 months and incorporates academic...
and business mentorship. So far, it has launched 24 companies.

This past year was pivotal in strengthening the ties between the New York and Haifa campuses. Prof. Ariel Orda is Jacobs Program Head at Technion.

Technion students intern at the Cornell Tech campus. The Jacobs Institute is formalizing a Technion Visitors Program to support short-term visits, and the Runway program is working to strengthen ties with Technion DRIVE entrepreneurs.

The Ruch Faculty Exchange Program supports faculty and student collaboration between Cornell Tech and Technion. Over 50 Cornell Tech students took part in the 2019 iTrek trip to Israel, half of whom were Jacobs students.

RENEE ZACHAROWICZ, HEALTH TECH, THE JACOBS INSTITUTE

“This program helped me crystallize my passions and interests by providing me with an academically rigorous education and means to apply classroom techniques to problem sets in the wild. The Jacobs Institute provides the framework to discover and then dive deeply into a subject area of interest while maintaining an industry-driven focus. Consequently, the Health Tech program boasts a multifaceted course load, augmenting coursework in machine learning, biostatistics, and neuroscience with courses in business, entrepreneurship and health tech engineering.

Above all, this Master’s program served as a unique and life-changing experience. [Trek, the Jacobs annual trip to Israel, was a microcosm of the educational experience by saturating its two-week winter trip with educational and recreational experiences]. I am most grateful for the friendships I have made on that trip and through all of my experiences at the Jacobs Technion-Cornell Institute as I worked, built and engaged with a group of international students with extraordinarily diverse backgrounds.”

- Renee Zacharowicz
Jacobs Institute

Renee, 24, is a Health Tech 2019 MSc alumna who graduated summa cum laude from Yeshiva University’s honors program. She is originally from Far Rockaway, New York.
GIVING 2018 - 2019

Guardians

Technion Guardians have made the highest level of commitment to the Institute

HELEN DILLER FAMILY FOUNDATION
CA, USA

DR. EUGENE KESSLER AND FAMILY
CA, USA

DR. ALFRED MUNZER AND MR. JOEL WIND
MD, USA

AVI SHAKED AND DR. BABS WALDMAN
IL, USA

KENNETH SKODNEK MD
NY, USA

ROBERT, YAN AND SAMANTHA STEWART
MI, USA

A complete list of giving is available at: presidentsreport.technion.ac.il
INDIVIDUAL AND FOUNDATION GIVING

GIFTS

Zvi Ackerstein Memorial Prize Fund
Adama Agricultural Solutions Gift for Archimedes Program
Maria Ascoli Fund for Applied Orthopaedic Research
Azrieli Foundation Gift to Upgrade Computer Farm in the Faculty of Architecture and Town Planning
Jacob Bar and Dan Mazar Laboratory in RBNI
Marguerite Barazani Greenberg Gift for Entrance Floor in Stanley Shalom Zielony Student Union Building
Beracha Foundation Fund for the First Steps Program
Beracha Foundation Gift to Biomedical Engineering Laboratory
Beracha Foundation Gift for Student Dormitory
Beracha Foundation Gift for Amos Horev Sports Arena
Beracha Foundation Faculty Recruitment Fund
Samuel H. Born Fund for Biomedical Research
Boxenbaum-Netta Gift for Archimedes Program
Dita and Yehuda Bronicki Gift for Hardware Initiatives in Bronica Center
Bnei Moshe Carasso Ltd. Gift for Computerization of Audio-Visual Library Services in the Moise and Palomba Carasso Center for Self-Study

Carson Trust Fund for JTCI Runway Program
Murray and Joseph Dalfen Fund for New Directions in Membrane Research
Davison Fund for the First Steps Program in the Faculty of Civil and Environmental Engineering
Andre Deloro Building for Bioscience, Medicine and Engineering
Helen Diller Quantum Center
Fischer Center for Reservists and Students with Learning Disabilities
Joseph Florian Memorial Fund
Alex Gellman and Robyn Moncrief Fund for the Technion Integrated Cancer Center
Grand/Holdstein Drone Technology Competition Fund for the Amos Horev Sports Arena
Yeshaya Horowitz Gift of Technion Research Fund
Yeshaya Horowitz Gift to Technion Fund for Advancement of Knowledge
Isler Gift for Accessibility Elevator in the Faculty of Aerospace Engineering
Joint Distribution Committee Gift for Druze High-School Students
Dr. Eugene Kessler and Family Fund for the Pre-University Center
Kleinkramer Family Apartment in the Undergraduate Student Village in Memory of Saul Kleinkramer
Lasky Foundation Fund for AUVSI Competition
Sam Lernik Trust Gift
Li Ka Shing Foundation Support of Research by Prof. Eliezer Shalev
Trudy and Norman Louis Fund for Applied Security Science and Technology Research in the Center for Security Science and Technology
Lewis and Joan Lowenstein Foundation Apartment in the Undergraduate Student Village
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**FAST FACTS 2019**

- **FOUNDED**: 1912
- **STUDENT POPULATION**: 13,587
- **ACADEMIC DEPARTMENTS**: 18
- **UNDERGRADUATE PROGRAMS**: 50
- **GRADUATE PROGRAMS**: 83
- **DEGREES AWARDED**: 117,139
- **FACULTY**: 565
- **TECHNICAL AND ADMINISTRATIVE STAFF**: 1,083
- **RESEARCH CENTERS**: 60
- **BUILDINGS ON CAMPUS**: 106
- **BUILT-UP AREA**: 468,477 m²
- **DORMITORY BEDS**: 4,977

---

**NUMBER OF STUDENTS 2018 - 2019**

<table>
<thead>
<tr>
<th>Year</th>
<th>Bachelor’s</th>
<th>Master’s</th>
<th>Doctorate</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>1,967</td>
<td>148</td>
<td>908</td>
<td>3,239</td>
</tr>
<tr>
<td>2019</td>
<td>1,992</td>
<td>139</td>
<td>921</td>
<td>3,266</td>
</tr>
</tbody>
</table>

**DEGREES AWARDED** (graduates)

- **Bachelor’s**: 2018 - 1,967, 2019 - 1,992
- **Master’s**: 2018 - 908, 2019 - 921
- **PhD**: 2018 - 216, 2019 - 216
- **TOTAL**: 2018 - 3,239, 2019 - 3,266

**TOTAL DEGREES AWARDED** (1924 - 2019)

- **Bachelor’s**: 84,720
- **Master’s**: 23,614
- **PhD**: 5,805
- **TOTAL**: 117,139

---

**TOTAL STUDENT POPULATION**

<table>
<thead>
<tr>
<th>Year</th>
<th>BSc</th>
<th>MD</th>
<th>MSc</th>
<th>PhD</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>9,503</td>
<td>459</td>
<td>2,886</td>
<td>1,078</td>
<td>13,926</td>
</tr>
<tr>
<td>2016</td>
<td>9,536</td>
<td>476</td>
<td>3,127</td>
<td>1,147</td>
<td>14,286</td>
</tr>
<tr>
<td>2017</td>
<td>9,819</td>
<td>501</td>
<td>3,105</td>
<td>1,113</td>
<td>14,538</td>
</tr>
<tr>
<td>2018</td>
<td>9,622</td>
<td>436</td>
<td>2,879</td>
<td>1,150</td>
<td>14,087</td>
</tr>
<tr>
<td>2019</td>
<td>9,354</td>
<td>546</td>
<td>2,729</td>
<td>1,155</td>
<td>13,587</td>
</tr>
</tbody>
</table>

* Including 18 on the Technion American Medical School Program

**FACTS AND FIGURES**

* All data correct to May 1st, 2019
**FISCAL OVERVIEW**

**OPERATING BUDGET 2018/2019**

(October 1, 2018 - September 30, 2019)

**Income**

- Government Allocation: 1,094,550
- Self Income: 228,400
- Tuition Fees: 126,000
- Technion Societies: 63,200
- Deficit: 26,924
- **Total Income:** 1,539,074

**Expenditure**

- Staff Emoluments: 773,034
- Pension Payments: 297,464
- Operating Expenses: 216,462
- Maintenance: 129,108
- Student Aid: 123,006
- **Total Expenditures:** 1,539,074

(*) The actuarial liability of the Technion as of September 30, 2018 was NIS 6.0 billion. The consolidated liability (Technion and TRDF) is NIS 6.6 billion.

**SPONSORED RESEARCH FROM EXTERNAL SOURCES**

($US M)

- 2011: 86.9
- 2012: 71.4
- 2013: 83.8
- 2014: 86.3
- 2015: 83.3
- 2016: 96.9
- 2017: 92.8
- 2018: 89.8

**TOTAL INCOME FROM TECHNION SOCIETIES**

($US M)

- 2010/11: 74.0
- 2011/12: 84.4
- 2012/13: 80.4
- 2013/14: 97.8
- 2014/15: 104.2
- 2015/16: 108.1
- 2016/17: 108.5
- 2017/18: 94.1

**TECHNION INVESTMENT**

 Millions of NIS %

- CPI Linked Investments: 3,011 45
- Stocks: 1,985 30
- Shekel Unlinked Investments: 1,468 22
- Foreign Currency Investments: 236 3
- **Total:** 6,699 100

**DEVELOPMENT EXPENDITURE 2017/2018**

(October 1, 2017 - September 30, 2018)

- **Thousands of $US**
- **Thousands of NIS**

<table>
<thead>
<tr>
<th>Category</th>
<th>Thousands of $US</th>
<th>%</th>
<th>Thousands of NIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buildings, Renovations &amp; Infrastructure</td>
<td>23,462</td>
<td>60.6</td>
<td>82,303</td>
</tr>
<tr>
<td>Multidisciplinary Research Centers</td>
<td>6,994</td>
<td>18.0</td>
<td>24,730</td>
</tr>
<tr>
<td>Laboratories &amp; Equipment</td>
<td>8,309</td>
<td>21.4</td>
<td>29,387</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>38,765</td>
<td>100%</td>
<td>136,420</td>
</tr>
</tbody>
</table>

* $US 1 = 3.627 NIS
LEADERSHIP

Lawrence Jackier
Chairman of the Board of Governors

Gideon Frank
Chairman of the Council

Prof. Peretz Lavie
President

Prof. Adam Shwartz
Senior Executive Vice President

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Prof. Wayne Kaplan
Executive Vice President for Research

Prof. Zalman Palmor
Executive Vice President and Director General

Prof. Boaz Golany
Vice President for External Relations and Resource Development

Prof. Peretz Lavie
President

Prof. Adam Shwartz
Senior Executive Vice President

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Prof. Orit Hazzan

Dean of the Jacobs Graduate School
Prof. Dan Givoli

Dean of the Azrieli Division of Continuing Education and External Studies
Prof. Zeev Gross

Dean of Students
Prof. Benveniste Natan

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Prof. Yoram Reiter

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Prof. Dan Geiger

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Faculty of Physics
Prof. Ehud Behar

Guangdong Technion-Israel Institute of Technology

Vice Chancellor
Prof. Ron Brachman

Joan and Irwin Jacobs Technion-Cornell Institute

Assistant to the President for Strategic Projects and Collaboration with Cornell University
Prof. Ariel Orda

Technion Program for Excellence
Prof. Idit Keidar

Center for Pre-university Education
Prof. Noam Soker

ADDitional OFFICERS

Deputy Senior Vice President
Prof. Alon Hoffman

Deputy Vice President for Research
Prof. Anath Fischer

Deputy Vice President for Research for the Pre-Clinical Research Authority
Prof. Jackie Schiller

Deputy Vice President for Academic Affairs
Prof. Avi Ostfeld

Deputy Vice President for Computing and Information Systems
Prof. Roy Friedman

Deputy Vice President for Safety Matters
Prof. Yaacov Mamane

Deputy Director General for Finance
Dganit Shindelman

Deputy Director General for Human Resources
Ariel Hazan

Deputy Director General of Operations
Zehava Laniado
### FACULTY

#### ACADEMIC FACULTY 2019

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Individuals</th>
<th>Full Time Equivalents (FTEs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Professor</td>
<td>226</td>
<td>226</td>
</tr>
<tr>
<td>Associate Professor</td>
<td>165</td>
<td>164</td>
</tr>
<tr>
<td>Assistant Professor</td>
<td>156</td>
<td>153.5</td>
</tr>
<tr>
<td>Lecturer</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Others</td>
<td>13</td>
<td>12.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>565</strong></td>
<td><strong>561</strong></td>
</tr>
<tr>
<td>Clinical Track Appointments</td>
<td>343</td>
<td>125</td>
</tr>
<tr>
<td>External Adjuncts</td>
<td>793</td>
<td>290</td>
</tr>
</tbody>
</table>

### NEW FACULTY APPOINTMENTS

#### ACADEMIC FACULTY 2019

- **ARCHITECTURE AND TOWN PLANNING**
  - Shany Barath, Assistant Professor
  - Emil Israel, Assistant Professor
  - Zvi Koren, Assistant Professor
  - Matanya Sack, Assistant Professor
  - Dan Price, Assistant Professor

- **BIOLOGY**
  - Noga Ron-Harel, Assistant Professor
  - Shay Stern, Assistant Professor

- **BIOMEDICAL ENGINEERING**
  - Limor Freifeld, Assistant Professor
  - Firas Mawase, Assistant Professor
  - Yosef Shamay, Assistant Professor

- **BIOTECHNOLOGY AND FOOD ENGINEERING**
  - Amit Zeisel, Assistant Professor
  - Yaniv Edery, Assistant Professor
  - Fadi Kizel, Assistant Professor
  - Sabrina Spatari, Associate Professor

- **CIVIL AND ENVIRONMENTAL ENGINEERING**
  - Ron Rothblum, Assistant Professor
  - Ori Rottenstreich, Assistant Professor
  - Inbal Talgam-Cohen, Assistant Professor
  - Gala Yadgar, Assistant Professor

- **COMPUTER SCIENCE**
  - Ron Rothblum, Assistant Professor

- **ELECTRICAL ENGINEERING**
  - Ido Kaminer, Assistant Professor
  - Einat Yalon, Assistant Professor

- **HUMANITIES AND ARTS**
  - Avital Binah-Pollak, Senior Teaching Fellow

- **INDUSTRIAL ENGINEERING AND MANAGEMENT**
  - Yair Goldberg, Associate Professor
  - Shlomi Laufer, Assistant Professor
  - Shimrit Shtern, Assistant Professor

- **MATHEMATICS**
  - Nir Lazarovich, Assistant Professor

- **MEDICINE**
  - Sara Selig, Associate Professor
  - Eitan Auriel, Clinical Assoc. Professor
  - Danny Eytan, Clinical Asst. Professor
  - Yelena Granovsky, Clinical Asst. Professor
  - Tamar Katz, Clinical Asst. Professor
  - Meir Preis, Clinical Asst. Professor
  - Shiri Soudry, Clinical Asst. Professor

- **NEW FACULTY APPOINTMENTS**

- **ARCHITECTURE AND TOWN PLANNING**
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  - Amit Zeisel
INTERNATIONAL AWARDS AND HONORS

The Aerosol Society
DDL Emerging Scientist Award
Assoc. Prof. Josué Sznitman
Faculty of Biomedical Engineering

American Society of Civil Engineers (ASCE)
Distinguished Member
Prof. Emer. Uri Shamir
Faculty of Civil and Environmental Engineering

Agora University of Oradea
Honorary Doctor
Prof. Alfred Bruckstein
Faculty of Computer Science

Association for Israel Studies (AIS)
Annual Shapiro Award for Best Book in Israel Studies
Assoc. Prof. Alona Nitzan-Shiftan
Faculty of Architecture and Town Planning

American Association for the Advancement of Science (AAAS)
Sartorius and Science Prize for Regenerative Medicine and Cell Therapy
Asst. Prof. Yaron Fuchs
Faculty of Biology

American Biophysical Society (BPS)
Margaret Oakley Dayhoff Award
Assoc. Prof. Meytal Landau
Faculty of Biology

Clarivate Analytics
Highly Cited Researcher
Prof. Michael Elad
Faculty of Computer Science

American Ceramic Society
Robert B. Sosman Award
Prof. Wayne Kaplan
Faculty of Materials Science and Engineering

American Chemical Society (ACS Axial)
Advances in Measurement Science Award
Assoc. Prof. Ester Segal
Faculty of Biotechnology and Food Engineering

American Society of Civil Engineers (ASCE)
Distinguished Member
Prof. Emer. Uri Shamir
Faculty of Civil and Environmental Engineering

Foundation for Landscape Studies
The John Brinckerhoff Jackson Book Prize
Assoc. Prof. Alona Nitzan-Shiftan
Faculty of Architecture and Town Planning

The Franklin Institute
2019 Benjamin Franklin Medal
Dist. Visiting Prof. Eli Yablonovitch
Viterbi Faculty of Electrical Engineering

Horizon 2020: EU Framework Programme for Research And Innovation
European Research Council Grants (ERC)

ERC Starting Grant
Assoc. Prof. Ronen Talmon
Viterbi Faculty of Electrical Engineering
Asst. Prof. Yuval Filmus
Faculty of Computer Science
Asst. Prof. Yoav Shechtman
Faculty of Biomedical Engineering

ERC Consolidator
Prof. Shulamit Levenberg
Faculty of Biomedical Engineering
Assoc. Prof. Kinneret Keren
Faculty of Physics
Assoc. Prof. Oren Cohen
Faculty of Physics

* Select list
ERC Advanced Grant
Prof. Amit Meller
Faculty of Biomedical Engineering
Prof. Ashraf Brik
Schulich Faculty of Chemistry

ERC Synergy Grant
Prof. Yoav Schechner
Viterbi Faculty of Electrical Engineering

Institute of Electrical and Electronics Engineers (IEEE) Fellow
Prof. Igal Sason
Viterbi Faculty of Electrical Engineering

IEEE Signal Processing Society Best Paper Award
Dist. Prof. Shlomo Shamai (Shitz)
Viterbi Faculty of Electrical Engineering

IEEE Signal Processing Society Claude Shannon-Harry Nyquist Technical Achievement Award
Prof. Michael Elad
Faculty of Computer Science

International Engineering and Technology Institute (IETI) Fellow
Prof. Igor Verner
Faculty of Education in Science and Technology

ISRAELI AWARDS AND HONORS

NATO Science Partnership Prize
SPS Prize in CBRN Defense

Assoc. Prof. Oded Lewinson
Rappaport Faculty of Medicine

Johnson & Johnson Women in STEM2D Scholars Award
Asst. Prof. Naama Geva-Zatorsky
Rappaport Faculty of Medicine

Nokia Bell Labs Prize
Dist. Prof. Shlomo Shamai (Shitz)
Viterbi Faculty of Electrical Engineering

Republic of France Ordre des Palmes Académiques
Prof. Daniel Rittel
Faculty of Mechanical Engineering

Schmidt Science Fellows (2019)
Grisha Spektor
Viterbi Faculty of Electrical Engineering

Society for Industrial and Applied Mathematics (SIAM) Fellows
Prof. Michael Elad (2018)
Faculty of Computer Science
Prof. Ron Kimmel (2019)
Faculty of Computer Science

Blavatnik Award for Young Scientists in Israel
Assoc. Prof. Moran Bercovici
Faculty of Mechanical Engineering

Council for Higher Education

Alon Fellowships
Asst. Prof. Ittay Eyal (2018)
Viterbi Faculty of Electrical Engineering
Asst. Prof. Ori Rottenstreich
Technion Computer Engineering Center
Asst. Prof. Aviv Tamar
Viterbi Faculty of Electrical Engineering
Asst. Prof. Yehonadav Bekenstein
Faculty of Materials Science and Engineering

Maof Fellowship
Asst. Prof. Fadi Kizel (2018)
Faculty of Civil and Environmental Engineering
Asst. Prof. Shady Farah
Wolfson Faculty of Chemical Engineering
Asst. Prof. Firas Mawase
Faculty of Biomedical Engineering

Israel Chemical Engineering Association Entrepreneurship and Innovation Prize
Prof. Havaazelet Bianco-Peled
Wolfson Faculty of Chemical Engineering

Lifetime Achievement Award
Prof. Emer. Avinoam Nir
Wolfson Faculty of Chemical Engineering

Israel Heart Society Honorary Fellow
Prof. Emer. Basil Lewis
Rappaport Faculty of Medicine

Israel Planners Association 2018 Notable Planner Award
Prof. Emer. Amnon Frenkel
Faculty of Architecture and Town Planning

Israel Vacuum Society IVS Research Award
Prof. Vair Ein-Eli
Faculty of Materials Science and Engineering

Municipality of Haifa Citizen of Merit Award
Dist. Prof. Yitzhak Apeloig
Schulich Faculty of Chemistry
Prof. Emer. Amos Etzioni
Rappaport Faculty of Medicine
Prof. Emer. Elias Toubi
Rappaport Faculty of Medicine
AWARDS & HONORS 2018/2019*

Technion Awards and Honors

Society of Electrical and Electronics Engineers in Israel (SEEEl) Honorary Fellow
Prof. Emer. Avraham Shitzer
Faculty of Mechanical Engineering

Israel Physical Society (IPS) Honorary Fellow
Prof. Emer. Joshua Zak
Faculty of Physics

Jacob Bekenstein Prize in Theoretical Physics
Asst. Prof. Shlomo Razamat
Faculty of Physics

Israel Young Academy Elected Member
Assoc. Prof. Asya Rolls
Rappaport Faculty of Medicine
Assoc. Prof. Hagai Perets
Faculty of Physics
Prof. Ashraf Brik
Schulich Faculty of Chemistry

Asst. Prof. Shahar Kvatsinsky
Viterbi Faculty of Electrical Engineering

Asst. Prof. Yaron Fuchs
Faculty of Biology

Yad Hanadiv (Rothschild Foundation) Michael Bruno Memorial Award
Prof. Hossam Haick
Wolfson Faculty of Chemical Engineering

Alexander Goldberg Research Prize
Asst. Prof. Alex Hayat
Viterbi Faculty of Electrical Engineering

Uzi and Michal Halevy Innovative Applied Engineering Award and Research Grants
Asst. Prof. Beni Cukurel
Faculty of Aerospace Engineering

Asst. Prof. Vadim Indelman
Faculty of Aerospace Engineering

Assoc. Prof. Alejandro Sosnik
Faculty of Materials Science and Engineering

Raymond and Miriam Klein Research Prize
Asst. Prof. Galia Maayan
Schulich Faculty of Chemistry

Hilda and Hershel Rich Technion Innovation Awards
Assoc. Prof. Aharon Blank and Itai Katz
Schulich Faculty of Chemistry
Assoc. Prof. Yael Yaniv
Faculty of Biomedical Engineering
Dr. Hen Dotan,
Prof. Gideon Grader,
Avigail Landman, Assoc.
Prof. Avner Rothschild, and Dr. Gennady Shter
Faculties of Chemical Engineering and Materials Science and Engineering
Assoc. Prof. Sefi Givli and Dr. Itamar Benichou
Faculty of Mechanical Engineering
Assoc. Prof. Moran Bercovici, Tat Zeidman Kalman, Nadya Ostromohov, and Tally Rosenfeld
Faculty of Mechanical Engineering
Assoc. Prof. Carmel Rotschild
Faculty of Mechanical Engineering

* Select list
Norman Seiden Prize for Academic Excellence
Prof. Levi Schächter
Viterbi Faculty of Electrical Engineering

Diane Sherman Prize for Medical Innovations for a Better World
Assoc. Prof. Alejandro Sosnik
Faculty of Materials Science and Engineering

Daniel Shiran Memorial Prize
Assoc. Prof. Avi Schroeder
Wolfson Faculty of Chemical Engineering

Henry Taub Prize for Academic Excellence
Assoc. Prof. Tal Carmon
Faculty of Mechanical Engineering
Assoc. Prof. Keren Censor-Hillel
Faculty of Computer Science
Prof. Yuval Ishai
Faculty of Computer Science
Prof. Eugen Rabkin
Faculty of Materials Science and Engineering

Moshe Yanai Awards for Excellence in Education
Assoc. Prof. Daniel Orenstein
Faculty of Architecture and Town Planning
Assoc. Prof. Adi Salzberg
Rappaport Faculty of Medicine
Assoc. Prof. Keren Censor-Hillel
Faculty of Computer Science
Assoc. Prof. Daniella Raveh
Faculty of Aerospace Engineering
Assoc. Prof. Avi Schroeder
Wolfson Faculty of Chemical Engineering

Faculty Prize
Andrew and Erna Viterbi Faculty of Electrical Engineering

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Assoc. Prof. Roei Amit
Faculty of Biotechnology and Food Engineering
Assoc. Prof. Yael Yaniv
Faculty of Biomedical Engineering
Asst. Prof. Roi Reichart
Davidson Faculty of Industrial Engineering and Management

Career Advancement Chairs
Nancy and Stephen Grand Career Development Chair
Asst. Prof. Shimrit Shtern
Davidson Faculty of Industrial Engineering and Management
Irwin and Bethea Green and Detroit Chapter Career Development Chair
Asst. Prof. Yehonadav Bekenstein
Faculty of Materials Science and Engineering
Jack Klein Career Advancement Chair in Cancer Research
Asst. Prof. Yosef Shamay
Faculty of Biomedical Engineering

Women’s Division Career Advancement Chair
Assoc. Prof. Sabrina Spatari
Faculty of Civil and Environmental Engineering
Northern California Career Development Chair
Asst. Prof. Eilam Yalon
Viterbi Faculty of Electrical Engineering

André Deloro Career Advancement Chair in Engineering
Asst. Prof. Shay Stern
Faculty of Biology
Chaya Career Development Chair
Asst. Prof. Fady Kizel
Faculty of Civil and Environmental Engineering

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Faculty of Mathematics
Asst. Prof. Amit Zeisel
Faculty of Biotechnology and Food Engineering
Taub Fellows
Asst. Prof. Ori Rottenstreich
Faculty of Computer Science
Asst. Prof. Inbal Talgam-Cohen
Faculty of Computer Science
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technionfriends@kurtzmarketing.com
www.technionfriends.nl

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Mobile: +46 734 36 94 50
stefan@sirgruppen.se
www.technionsts.se

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Published by the Division of Public Affairs and Resource Development

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Editor: Yvette Gershon
Writer: Rebecca Kopans
Photo Research: Hilda Favel

Design: CastroNavy
Photography: Corindus Vascular Robotics; Cornell University; GTIIT;
Itamar Medical; Gidon Levin; Mazor Robotics; Muki Schwartz; Rami Shluss; Av Shmoul; Sharon Tzur; Tom Yeshurun; Nitzan Zohar; and others.

Printed in Israel by Meiri Press.
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