



# FROM CHALLENGE TO OPPORTUNITY

President's Report  
2021

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# MESSAGE FROM THE PRESIDENT

Recently, Netflix released a documentary about the world's last Blockbuster video store. It would be easy to see this story as another instance of unexpected industry disruption, the video version of Kodak, Encyclopedia Britannica, and incandescent lights. But Blockbuster had once been offered the chance to buy the world's largest streaming service—and declined. This is a story, then, not just of disruption, but also of missed opportunity.

For those of us in higher education, this is undoubtedly our Blockbuster moment. Without warning, and within just one week, we were forced last March to shift our operations online. This change has posed an undeniable challenge to teaching and creating community. But the disruption also offers the chance for experimentation and improvement. And perhaps most important, it provides an opportunity to move beyond a fixed modality.

For centuries, universities have adhered to a single model, one that depends almost exclusively on in-person interactions and the division of knowledge into distinct disciplines. Increasingly, however, this requirement is at odds with how we obtain, produce, and disseminate knowledge, and with the way we arrive at solutions to the world's most pressing problems. In an age of climate change, automation, big data, and COVID-19, we must ask ourselves whether this model offers the best or even the only way forward, and whether it is truly up to the task of advancing our goals.

At Bar-Ilan, we began to raise these questions in earnest four years ago. We decided that to fulfill our core mission of impact, we would need to embrace new teaching technologies and new approaches to research. Most important, we recognized that only by embracing an innovation mentality could we fulfill our core mission while increasing our impact.

In the realm of education, for example, we have begun to make possible a more personalized experience. True, our campus has just reopened for on-site learning, but courses

will continue to be offered online, and many will combine in-person and remote study. The future will see both small, in-person seminars and Massive Open Online Courses (MOOCs), and our students will live both nearby, across the country, and overseas. Technology combined with an openness to new alternatives allows for more students in more places and with a wider range of life circumstances to pursue a Bar-Ilan degree. Students can also choose the modality that best fits their learning style, resulting in more successful performance in every field.

By breaking down barriers between faculties and departments, we are also opening the doors to new research possibilities. For instance, Bar-Ilan researchers at the forefront of the emerging field of bio-convergence are bridging the gap between medicine, engineering, and the life and computer sciences to develop more targeted, cost-effective diagnostic and therapeutic technologies. Meanwhile, researchers in fields as seemingly incompatible as data science and the humanities are producing new tools for understanding ancient texts, while social scientists and chemists are developing integrated, effective solutions for smart cities. In short, an innovation mindset makes binary thinking unnecessary. And like its students and researchers, the university of the future can be and do many things at once. It can rent its videos and stream them, too.

To be sure, the work required to become a truly hybrid, cross-disciplinary university is substantial, and we have arguably only scratched the surface. Yet I am confident that the culture of accelerated innovation that all of us—leadership, faculty, and staff—have created here at Bar-Ilan will ensure that we succeed. And indeed, we already are: Over the last three years, we reversed a downward trend in enrollment, growing our student body by 20 percent. We saw a rise in our average acceptance grade, too, an achievement that reflects the growing regard in which Bar-Ilan is held by potential students and the larger public. We turned around our growing deficit and will begin the new academic year with a balanced budget. Finally, we completed construction on new dormitories for more than 1,000 students and began work on a new home for our computer science department and a teaching facility for the Azrieli Faculty of Medicine. These structures will allow Bar-Ilan to educate more students, increase and improve its research output, and extend its influence throughout Israeli society.

In the pages that follow, you will learn about the many areas in which Bar-Ilan has made an impact this past year. What I hope you take away most, however, is the knowledge that Bar-Ilan is moving forward, and growing, evolving, and innovating relentlessly. As a global pandemic reminded us, we cannot predict the future. At Bar-Ilan, however, we are doing our best to create it.

## Arie Zaban

President of Bar-Ilan University

A. Zaban





# MESSAGES FROM THE CHAIRMEN



## 2020...

As we said in last year's report...

*We are living in unprecedented times and dealing with many unknowns.*

*President Zaban, together with the Administration, Academic Faculty and dedicated Lay Leadership are all strongly committed to not let Corona get in the way of the important advancements that are continuing to be made at Bar-Ilan University.*

## 2021...

One year later, we are still living in unprecedented times, however, life, on and off campus, is returning to (a new) normal. We are as strongly committed today, as we were a year ago, not to let COVID-19 get in our way and we can all feel excited about the future of Bar Ilan.

We can take pride in how the University's Academic and Administrative staff and the lay leadership all worked together to meet the many challenges with great ingenuity and purpose. While sharing the same goals of continuing academic excellence, innovative research, finding new ways of teaching and meeting the changing needs of our students, we were able to successfully achieve those goals sooner than we projected.

What would have taken years, happened in days. Credit goes to professors, lecturers, and administrative staff for going

100% online in three days. In the spirit of "turning lemons into lemonade," we have developed new teaching methodologies, new means of engagement and better uses of available technology to meet the students' needs of today.

A "Corona Forum" was established, and researchers were able to reach across departments and disciplines to advance their own, and each other's work, and as a result 70 multidisciplinary COVID-19 related research projects were established.

We continued our commitment to our unique "Jewish mission" through educational activities on behalf of Jewish communities in Italy, France, North America, Asia and other places throughout the world by caring for International students and new olim who were living on the campus during the COVID-19 lock down. Another example of expressing our unique Jewish mission is a new program called "Philosophy of Social Judaism" where students met with prisoners to study ethics sourced from Jewish texts. These programs evidence our commitment to our core Jewish values in assisting Jews both in Israel and in the Diaspora and the global community at large.

Thanks to the strong leadership of President Arie Zaban and his excellent team, together with the support of our many partners and friends in Israel and around the world, we advanced in many important areas and accomplished several tremendous things this year.

To list just a few:

- This year we have increased the student body by 3,000 students, bringing the total increase over the past few years from 17,000 to almost 20,000 while, at the same time, the average acceptance grades have risen.
- We were chosen against other major universities to house the National Psifas (Mosaic) Initiative for Genetic Sequencing, which is tasked to build a national genomic clinical database for patient and population specific medical treatments and research.
- We strengthened our research base and activities in the emerging field of bio-convergence, which brings together medicine, engineering, and both life and computer sciences to develop advanced diagnostic and therapeutic technologies.
- We equipped 50 HyFlex classrooms which allows students to access classes online or in person, and all achieve the same learning objectives. We also provided faculty online training for more than 1,300 specific lecturers to help our faculty adapt to an online teaching platform.
- We established "Cramim," our new honors program in the Multidisciplinary Department of Jewish Studies and we launched undergraduate and graduate programs in English for international students.

• We appointed Rabbanit Devorah Evron to enhance our campus spiritual and educational Jewish life, demonstrating our support also to our female student body and faculty.

• We recruited new female researchers and PhD and postdoctoral students to the STEM faculties and appointed a new advisor on gender equality.

• We established the University Center for Youth, offering programs to outstanding high school students in the sciences and math which will ensure a future pipeline of scientists in fields critical to the health, security, and prosperity of the state.

To end as we did last year...and which still remains true...

*Our collective support is critical and makes all the difference. Together, we will continue to dedicate ourselves to the many challenges ahead and will not only persevere but will come out stronger than ever.*

Wishing everyone the best of (continued) good health.

**Michael G. Jesselson**  
Chairman, Board of Trustees



# Impacting tomorrow, today.



Dear Friends,

While events have made it impossible to meet in person again this year, I am relieved and grateful that the end of this difficult period is finally in sight. As I write these words, our students are returning to campus for classes, seeing their lecturers, their friends, and the many dedicated staff who have supported them all these long months in person, in some cases for the first time. As successful as our transition to an online university has been, there is no substitute for the sense of community created by our unique campus environment. I hope that all of you, too, will soon be able to come here and visit us again. While the pages ahead will tell you about the many ways that we have turned this year's challenges into opportunities, only by seeing the University's accomplishments for yourselves can you appreciate the incredible work of Bar-Ilan's faculty, staff, and leadership.

Of course, the campus you'll visit will be in certain ways a different place. Our commitment to scientific innovation has not changed, nor has our unique emphasis on Jewish literacy and unity. But there is no doubt that we are a more dynamic university, implementing more innovative methods of teaching, opening our classrooms up to the world, and providing the public with access to the vast knowledge we contain. We are a more digitized and more efficient university, too, making data-driven decisions about how to use resources in a better way and help more students succeed in their studies. We are now focusing on a digital platform for our researchers' publications, as well, ensuring that they are available to the world and raising our profile on the international stage. Our investments

in advanced management systems for both faculty and staff, along with our efforts to recruit highly qualified researchers and scholars for the University, also paid off in the realm of enrollment: We attracted more students, and more students with a higher average acceptance grade, than ever before. This larger student body brings us closer to our target of a balanced budget for Bar-Ilan. Finally, new capital projects, including the construction of a new building for our computer science department and a new teaching facility at the Azrieli Medical Faculty, are not only remaking the look of our campus, but allowing us to train more talented scientists and doctors who will make meaningful contributions to the world.

It is deeply exciting to be a part of these changes taking place at Bar-Ilan. They are proof that clear goals combined with a detailed plan of action and the shared efforts and enthusiasm of all involved can lead to extraordinary outcomes—for Israel, for the Jewish people, and for all humanity. We are indeed influencing tomorrow, right here and now at Bar-Ilan.

**Shlomo Zohar**

Chairman, Permanent Committee



# EDUCATION



## Turning Learning into an Experience

When Bar-Ilan transitioned, in the course of just one week last March, to a completely online university we showed that we are capable of responding to extraordinary situations with both efficiency and agility. At the same time, we were aware that our successful response was the result of longstanding efforts to invest in both physical infrastructure and human capital—namely, in our faculty.

To enhance the learning experience, Bar-Ilan expanded the number of staff in its teaching enhancement center this year. Moreover, along with its 30 regular workshops on a range of issues in teaching, the University also offered an additional 30 workshops on adapting subject matter to online platforms and digital learning techniques. Altogether, more than 1,300 Bar-Ilan lecturers participated in training this year alone, making for a more engaging and effective educational experience for years to come.

The shift to online teaching was also accompanied by a greatly expanded role for Moodle, the University's learning management platform: Within weeks, coursework for all classes could be turned in, and a few months later, all exams held, completely online. Finally, Bar-Ilan created the infrastructure for the filming of all course lectures; the number of videos in the course archive is currently upwards of 3,000—and counting.

While these advancements made it possible for students anywhere in Israel to join in courses and laid the groundwork for remote degrees, upgrades to the physical teaching space ensure that the campus still remains a strong draw. The number of interactive classrooms, for example, which allow students to move throughout the space and interact with targeted technology, more than doubled from two to five, while the number of hyflex classrooms, which give students the option of attending sessions either in person or participating online,

grew to a remarkable 50. Finally, the campus is now home to a number of new outdoor learning spaces, which look to remain popular with both students and faculty long after COVID restrictions are a thing of the past.

To ensure that as many students as possible complete their degrees, the University also established the Center for Student Retention and Advancement this year. The center will map the reasons for dropout rate by department, collect data to identify dropouts before they occur, and provide academic, financial, and psychological support.

Last, while not even a pandemic could stop us from opening new academic programs, it did underscore the importance of the chosen subjects of study. The new master's in health systems management with a major in public health, for example, will prepare professionals to tackle the complex problems that face Israel's healthcare system, while the new undergraduate degree for Haredi students in education systems leadership and management aims to address the challenges facing this population by empowering the visionaries within its ranks. And a new, multidisciplinary undergraduate degree in the social sciences integrates students with disabilities, furthering the University's commitment to educating as broad a cross-section of Israeli society as it possibly can.



**Prof. Amnon Albeck**  
Rector





Prof. Arie Reich

**For law professor and vice rector Arie Reich, the sudden shift to remote learning was a chance to fast-track processes that had long been part of Bar-Ilan's plan.**



## Nothing Abrupt About It

As one might expect of a renowned scholar of international trade law, Bar-Ilan's new vice rector Prof. Arie Reich—the former dean of the Faculty of Law and Dean of Students at Bar-Ilan—chooses his words carefully. For example, his description of the year's pivot to remote learning, a process, it turns out, that wasn't actually a pivot at all. It was “an acceleration of plans that the University had long ago set in motion,” he clarifies. Much like the COVID vaccine, “What might have taken 10 years, we simply did all in one.”

Having upgraded the online learning management platform Moodle for interactive teaching system three years ago, Bar-Ilan was primed for its widespread use. In fact, Reich points out, a video produced by Bar-Ilan, explaining how to maximize the platform's potential, was quickly distributed at the start of the pandemic by all Israeli colleges and universities. “The fact that our infrastructure was ready meant that we could focus on helping our faculty adjust to the new mode of teaching,” which Bar-Ilan did, over the course of 60 workshops for lecturers on digital teaching techniques, more than half of which were discipline specific. Indeed, Bar-Ilan's Teaching Enhancement Center provided guidance to no less than 1,300 participants, almost four times more than the previous year.

It would almost seem as though Bar-Ilan were prepared for a global pandemic. One wonders: Were there any surprises in 2020? Prof. Reich drew on his experience at the Faculty of Law to explain.

### What has the online teaching phenomenon taught you?

More than anything, that location is not a limiting factor. I'll use my seminar on international trade regulations in the Faculty of Law as an example. I invited a lecturer from the World Trade Organization to teach one class, and a representative of China's Ministry of Commerce to teach another. In the past, students would have learned about China's trade policies from their course lecturer or a text; bringing someone of this stature and with this degree of expertise to campus would have been too complicated and expensive an affair. But now that increased bandwidth allows us to open up our classroom to the world, we have every intention of inviting the world in.

### The world came to Bar-Ilan's law students. Any examples of Bar-Ilan's law students going into the world?

As a matter of fact, they're going to Germany next month: Students from the faculty will be competing in the first ever virtual Frankfurt Investment Arbitration Moot Court, the world's leading law school competition in investment arbitration. Since last fall, the team has been preparing its oral arguments, which it will present to the competition's judges, who are based in Frankfurt, by Zoom. By moving the Moot to an online platform, teams that were previously unable to travel to the competition can now participate. Even better, our team has been able to “attend” the Milan Investment Pre-Moot Competition and follow the preparation of teams around the world, learning from them and improving its own approach.

**So it's not just about connecting lecturers with students. It's as much about connecting students in different places with each other.**

Exactly. For instance, the Faculty of Law is now envisioning a course on moral, ethical, and practical problem solving in which a class in Israel and another in, say, London or Paris studies the same curriculum. By bringing the two classes together for discussions and debates, each side would learn not only about the intricacies of international law, but also the underlying cultural reasons for approaching issues in certain ways. This model would work well for courses on conflict resolution, too. This is a way in which the technology not only makes the classroom more dynamic, but also more effective. Students can confront the real world application of theories while still pursuing their degrees.

### The technology expands the size of the discussion table. But does it change the quality of the discussion, too?

We think it can. And we'll find out soon: This year, the University is running a pilot project in various departments that uses an artificial intelligence-based discussion platform for engaging and assessing conversations outside the classroom. The platform encourages participation by means of a discussion board with prompts for substantive arguments, and then promotes discussions that refer to data or evidence. Finally, it evaluates the contribution of each student so that she can improve the quality of her argument in the future. The idea is to teach not only a topic, but also critical thinking and rhetoric skills.

**“IF HEALTHCARE IS HEADED TOWARD PRECISION MEDICINE, EDUCATION IS HEADED TOWARD TARGETED TEACHING METHODS.”**

### Do students seem to be learning better, thanks to these technologies?

Well, we just held 22,000 online exams this past January/February, so we'll have a good sense of how well course material was mastered. The introduction of an online exam system was actually one of those successes that was many years in the making and took much effort, manpower, and creativity to become a reality. What I can tell you now is that, looking back, the students realize how much more convenient the new system is. Bar-Ilan is really a pioneer in cutting edge examination technology in Israel, and all of the other universities in the country have been watching us to see how well it goes. There are still some technical issues that need ironing out, but we intend to use the new system for 100 percent of tests next year.

This system is actually another step toward increasing access to a Bar-Ilan education: Now that we can offer all the components of a course online, we can reach students in the periphery, for instance, and offer a range of micro-degrees.

### Is online teaching where the future is headed, then?

If healthcare is headed toward precision medicine, education is headed toward targeted teaching methods. Bar-Ilan is preparing a three year plan that seeks to match courses with the right type of technology. There will be courses that are between 80-100% online and Massive Open Online Courses (MOOCs), whose aim is largely the internationalization of the University. There will also be hybrid courses that integrate pre-



filmed lectures, live lectures, and Moodle discussion groups. Then there will be “blended” courses, in which students are in a physical classroom all of the time, but the lecturer uses interactive media, such as live guest lectures or digital quizzes, as part of the curriculum.

**So it's fair to say that passive learning is becoming a thing of the past?**

If you've ever heard a class full of students doing a Kahoot quiz, you'll know how effective the emphasis on interactivity can be. They get really competitive and excited about winning. Hard to see a way back from that kind of engagement. And really, who would want to?



## Teaching by the Numbers

# 60

workshops for lecturers on digital teaching techniques

# 1,376

lecturers participated

# 1<sup>st</sup>

Israeli university to pioneer online exam technology

# 22,000

online exams

# 50

HyFlex classrooms for live and remote learning





# OUTDOOR LEARNING SPACES



The covered bridge near the  
Psychology Building

**A patch of grass, a few trees for shade, and a lot of cooperation and WiFi: Welcome to Bar-Ilan's open learning spaces, a COVID-compliant solution to the ban on indoor gatherings and a much loved innovation that's here to stay.**

Spring weather is generally considered a distraction from one's studies. But this year, in the face of Israel's ban on indoor gatherings, Bar-Ilan decided the real distraction was traditional notions of what a classroom has to be. With an upgraded Wi-Fi infrastructure, some weatherproof chairs and desks, and power points for electronic whiteboards, Bar-Ilan took to the grass to bring students back to campus, both for the sake of their studies and for their sense of community. Given the open learning spaces' enormous success and the year round sunshine in Ramat Gan, the biggest challenge post-COVID will undoubtedly be convincing students to take their learning back inside.



The gazebo on the Lilly  
Shapell Promenade



The Paul and Sarah Frydman  
Law School



Bob Shapell Park



# FIGHT SIMULATORS AND OTHER TEACHING TOOLS

**In the country's flagship teaching simulation lab, new teachers earn their wings by experiencing real classroom challenges, and gain the confidence to keep at it beyond their maiden flight.**

Detracting points from a student whose video was turned off in a remote learning class would seem to be an open-shut matter, as open-shut, one might argue, as the camera itself. But according to Prof. Yaacov Yablon, head of Bar-Ilan's Pinkhos Churgin School of Education, when it comes to teaching, nothing is quite that simple. "Students will argue that they didn't know they needed the camera on, or that they didn't realize it was off. Or maybe they'll say that they couldn't turn it on because they lack privacy. These kinds of responses, and the countless other frustrating interactions that they don't prepare you for when you're earning your teaching degree, cause teachers to lose their patience and ultimately their desire to teach," he explains, pointing out that as many as 25% of new teachers decide to leave the field within their first few years on the job. It's a phenomenon that

Bar-Ilan's HaLev Center for Simulation in Education—a first of its kind initiative for helping educators manage conflicts and build better communication skills—aims to change.

Following the successful use of simulation and debriefing for training in aviation and medicine, HaLev enables more than 7,000 teaching students and new teachers every year to experience conflicts relevant to their fields in a safe and supportive learning environment. With the help of professional actors and more than 300 scripted situations, HaLev engages participants in role-played interactions and then uses filmed footage as the basis for group discussion and analysis. "When a new teacher encounters an angry parent or principal for the first time, he has no professional experience from which to draw. A workshop at our center can be their only guide to navigating these challenges," says Yablon. "Then there's the situation of a school rabbi in the state's religious sector. On the one hand, he's meant to provide spiritual guidance, and on the other, he's expected to enforce school regulations on religious observance. How to navigate this gap is a source of immense confusion and frustration, and our center is often the first chance they have to address the problem in a goal-oriented way."



The HaLev lab looks just like a real classroom—and the actors can be as challenging as real students.



Prof. Yaacov Yablon, head of the Pinkhos Churgin School of Education and member of HaLev, the Center for Simulation in Education.

**“ WHEN A NEW TEACHER ENCOUNTERS AN ANGRY PARENT OR PRINCIPAL FOR THE FIRST TIME, HE HAS NO PROFESSIONAL EXPERIENCE FROM WHICH TO DRAW. A WORKSHOP AT OUR CENTER CAN BE THEIR ONLY GUIDE TO NAVIGATING THESE CHALLENGES. ”**

As for how teachers can deal with conflicts surrounding closed cameras, Yablon offers a surprising answer: Don't worry about it so much. "Teachers need first to explain that videos should be on, so that students understand their responsibility. But teachers can also allow for videos to be turned off some of the time, so that students have a measure of choice. Most important, when a teacher is really engaging, the student will see how much better the experience is when he's fully present. And then," Yablon finishes optimistically, "there isn't any conflict at all."





# ZOOM IN: GUEST LECTURES IN THE HUMANITIES

☉ The University of Chicago's Prof. Glenn Most spoke about shame and rationality in the *Gorgias*, and its Prof. James Redfield about Aristotle and the intellectual virtues.

☉ Prof. Julia Annas of the University of Arizona spoke about virtue in the Socratic dialogues.

☉ Prof. Douglas Cairns of the University of Edinburgh spoke about phenomenology in Euripides' famous tragedy *Hippolytus*, Dr. Amanda Potter of the Open University spoke about the *Odyssey*, young adult fiction, and creative writing, and Dr. Arlene Holmes-Henderson of King's College London discussed teaching the classics in the shadow of COVID-19.

☉ Dr. Sophie Holmes-Elliott of Queen Mary University of London lectured on linguistic variation and change between childhood and adolescence; Dr. Petros Karatsareas of the University of Westminster on ethnocultural revitalization in complementary Greek schools in the UK; Dr. Gerardo Ortega of the University of Birmingham on the acquisition of sign language as a second language; and Dr. Adam Schembri of the University of Birmingham on the linguistics of Australian and British Sign Language.

☉ Dr. Sophia McGee of the City University of New York's Center for Ethnic, Racial, and Religious Understanding discussed teaching diverse populations.

◆ Prof. Rebecca Cypess of Rutgers University in New Jersey spoke about music in Jewish culture, music in the history of science, and women in music in the course "Introduction to Music."

☉ As part of a Rector's research group called "From Statements to Action: Technological and Other Measures in Combatting Anti-Semitism by Governments and Political Actors," Prof. Rumyana Marinova-Christidi, Head of Hebrasitika at the University of Sofia, discussed contemporary anti-Semitism in Bulgaria, while Prof. Günther Jikeli, the Erna B. Rosenfeld Professor at the Institute for the Study of Contemporary Antisemitism at the University of Indiana, analyzed anti-Semitism on social media. Prof. Jillian Rogers of the University of Indiana at Bloomington presented at the departmental seminar on processing grief and trauma through music.

☉ Dr. Ronald Blankenburg of Radboud University in The Netherlands talked about the concept of virtual reality in ancient Greek epic.

☉ Prof. Lynne Bowker of the University of Ottawa, Dr. Lucas Nunes Vieira of the University of Bristol, Dr. Mary Nurminen of the University of Tampere in Finland, and Dr. Mondheera Pituxcoosuvann of Ritsumeikan University in Japan were guest lecturers at a conference about human v. machine translations.

☉ Rabbi Naftali Haleva of Istanbul and Nayat Karaköse of the Hrant Dink Foundation, founded to monitor hate speech and strengthen democracy in Turkey, spoke about Turkey's relations with its Jewish community.

☐ Dr. Julia Langkau of University of Flensburg in Germany gave a talk titled, "Vivid Imagining and the Experience of Literary Fiction."

☉ Dr. Marisa Casillas of the Max Planck Institute in Germany spoke about early language development in subsistence communities.

☉ Dr. Olga Parshina of the Center for Language and Brain at the Higher School of Economics in Moscow spoke about bilingual reading fluency.

☉ Prof. Miri Rubin of Queen Mary University of London; Laura Bernardazzi of St. Andrews University; Kristýna Zoé Syrová of the University of Oxford; Volker Hille of Museum Schnütgen in Germany; and Dr. Yael Manes of Agnes Scott College in Georgia presented at a conference on texts and images in medieval and early modern times.

☉ Dr. Anastasia Bakogianni of Massey University of New Zealand explored the role of Greek classics in modern Greek culture.

☉ Prof. T. H. M. Gellar-Goad of Wake Forest University spoke about Lucretius' *De Rerum Natura*, and Prof. Ed Halper of the University of Georgia about Aristotle on grand ends.

## Notable guest lecturers from overseas in the Faculty of Humanities

☉ English as a Foreign Language Unit

☉ Department of Classical Studies

☉ Department of Translation and Interpreting Studies

◆ The Department of Music

☐ Department of Philosophy

☉ Department of English Literature and Linguistics

☉ Department of General History



In Bar-Ilan's Department of English Literature and Linguistics, students willing to share the sensitive process of literary creation find a supportive and surprising community.



For all newcomers to the art of “life writing,” or the recording of one’s experiences or memories, the act of reading aloud can be a daunting feat. But for the undergraduate students in Bar-Ilan’s Department of English Literature and Linguistics, sharing personal stories comes with an added challenge: For many, it’s the first time they’ve opened up to someone so unlike them.

“Nearly half our students in past years have identified as Palestinian-Israelis and the other half as Jewish, with a sprinkling of international students in the mix,” explains Prof. Ilana Blumberg. Blumberg is lecturer for the “Life Writing” course, director of the department’s Shaindy Rudoff Program in Creative Writing, and author of *Open Your Hand: Teaching as a Jew, Teaching as an American*, which describes

a method for teaching the humanities based on both Jewish and democratic values. “That’s the reason we make the act of writing and sharing one’s own stories a key part of the curriculum. Literary study and academic communities require close attention to both textual and human voices. By the end of the year, our students begin to see each other as valuable participants in each other’s educations. It’s not just what we’re reading,” she concludes, “but with whom we’re reading that makes for genuine learning.”

The same principle holds for the Shaindy Rudoff Program, an MA in English Literature with a unique emphasis on Jewish culture and tradition. Boasting a wealth of published authors among its graduates’ ranks, the aspiring writers who join the program each year—25 this year alone, a remarkable number for a master’s program in the humanities—find that the support of these alums is vital to their ability to pursue their literary dreams. “It’s not by accident that we’ve managed to buck the trend in writing programs toward competition. Our teaching practices are designed to create a sense of mutual respect and inclusion, even as we focus on honing each student’s own skills in self-expression,” says Blumberg. She then adds thoughtfully, “Which is exactly how a creative program that draws on Jewish tradition should be.”

“IT’S NOT JUST WHAT WE’RE READING,  
BUT WITH WHOM WE’RE READING THAT  
MAKES FOR GENUINE LEARNING.”



Prof. Ilana Blumberg



# Highlights of a Literary Year

## Islam, English Literature, and the Israeli University

Prof. William Kolbrener and Dr. Daniel Feldman, Bar-Ilan professors of English and hosts of *Heretics in Truth: An Academic Podcast* from Israel, interviewed Bar-Ilan student Hasan Hajj from Tayibe to discuss what it's like to observe Ramadan while studying English literature at an Israeli university.



Prof. William Kolbrener



Dr. Daniel Feldman



Prof. (Emeritus)  
Michael P. Kramer



Yossi Klein Halevi, Guest Lecturer

## Celebrating the Writing Life

In May, faculty, students, and graduates honored Prof. Michael Kramer, Department of English Literature and Linguistics and co-founder of the Shaindy Rudoff Program and the founding editor of the department's *MAGGID: A Journal of Jewish Literature*, with an event upon the occasion of his retirement. An online conversation about writing on Israeli culture to an English-speaking audience, the event featured the acclaimed writers Yossi Klein Halevi and Matti Friedman. Klein Halevi is the author of four books, including *Like Dreamers: The Story of the Israeli Paratroopers who Reunited Jerusalem and Divided a Nation*, which won the National Jewish Book Award, and Friedman of three award-winning books, including *Spies of No Country*, the story of Israel's first intelligence agents.



Matti Friedman, Guest Lecturer



Prof. Marcela Sulak

## Rhyming in Czech

Together with graduate students at Palacky University in Olomouc, the Czech Republic, the Shaindy Rudoff Program hosted an international poetry reading featuring poems translated by ten current Literary Translation and Poetry students. The reading was organized by the program's Prof. Marcela Sulak, Department of English Literature and Linguistics and author of four collections of poetry, four-time recipient of the Academy of American Poetry Prize, and winner of five FLAS prizes for the study of Czech and Yiddish. Her most recent work, *City of Sky Papers*, was launched in a program event in March featuring the author Erika Meitner.



Carmit Delman, Guest Lecturer

## Serving Up Stories

Carmit Delman, author of *Chutney: Growing Up Between Cultures, A Memoir of an Indian Jewish Girl*, hosted a special workshop for alumni in February on food and literature. Responding to the COVID pandemic, Delman discussed how the experience of cooking endlessly, or just for one, can be the subject of sumptuous stories, and how writing about food can make for a more mindful life.



## Joint Debut

In December, the Shaindy Rudoff Program hosted a launch for four graduates' new books: *Bass 1998*, an anthology of stories by Karen Marron; *Glare*, a book of poems by Gabriella Rieger; Geula Geurts's *The Beginnings of Fire*, winner of the 2020 Chapbook Contest; and Joanna Chen's translation of Meir Shalev's *My Wild Garden*.



# STARTING YOUNG

By establishing a new University Center for Youth, Bar-Ilan is expanding its student body to include young people with the potential for enormous impact.

Ensuring an adequate, well-trained supply of scientists and scholars for Israel depends in large part on what thousands of gifted students decide to study each year in university. And their decision, in turn, depends in large part on whether they had access to stimulating coursework and inspiring teachers in high school.

To ensure a future pipeline of STEM leaders for Israel, as well as to cultivate innovative thinkers across the disciplines with the skills required for leadership, Bar-Ilan founded a new, fully staffed University Center for Youth this past year. Along with summer camps, school field trips, and a schedule of after-school enrichment activities, the center now runs three new programs in science and technology in partnership with the Ministry of Education's Division for Gifted and Outstanding Students the Center for Future Scientists. Each program brings outstanding high school students into the classrooms and the labs of Bar-Ilan's leading physicists, mathematicians, computer scientists, biologists, and engineers.

## Odyssey

A four year, twice weekly program from the ninth through twelfth grades, Odyssey provides outstanding students with both technical skills and research experience in quantum engineering, key to the development of ultra-fast computers, hack-proof communication methods, and advanced imaging devices—and ultimately, to Israel's security. Alongside their time in the classroom in the lab, students participate in workshops on interpersonal skills, social values, and leadership, and meet with top scientists in the University's physics, mathematics, and engineering departments as well as with researchers in industry.

## Computer Science Team

Bar-Ilan's leading computer science researchers train a select group of gifted high school students to represent the State of Israel at a computer science competition each year. Through multi-day training camps, seminars, and study days, the program imparts complex thinking and problem-solving skills and introduces students to a wide range of topics in this dynamic field. At the last annual Computer Science Olympiad, at which 87 countries participated, a Bar-Ilan team member took home the gold.

## Students for a Better Society

Months into the COVID pandemic's remote learning routine, Israel began to see a decline in academic performance and motivation among its youth, particularly those from disadvantaged backgrounds and in the country's periphery. Bar-Ilan's University Center for Youth, however, saw a unique opportunity: Through "Safeguarding Education," students earned scholarships by tutoring students in STEM and English, virtually. "It's really a win-win situation," explains Shani Mizrachi, who developed and oversaw the program, which grew to include nearly 50 tutors in just a few months. "Undergraduates, graduates, and even doctoral students who were unable to work on account of the pandemic could earn much needed money by tutoring youth who otherwise wouldn't be able to afford tutoring. And since both STEM and English skills are so critical to Israel, our students were providing assistance in precisely the areas that need the most strengthening." The program had yet another benefit, too: Bar-Ilan students introduced disadvantaged youth to the concept of higher ed. "Precisely when so many youth became disconnected from education, Bar-Ilan students stepped into the gap to remind them of the value of persevering academically," concludes Mizrachi. "We're thrilled that it could fill a need during the COVID pandemic, but unlike the virus, we plan to spread to more and more youth long after the vaccine."

60

students out of 400 applicants selected to take part in Odyssey and Alpha

50

students out of 3,200 applicants selected to take part in the Olympics program

150

number of high schools from which participating students come

20

number of local authorities who partner in Bar-Ilan's gifted programs

## Alpha

Founded with the aim of exposing gifted youth to the world of high level scientific research, Alpha—which began recruiting its first class of participants this year—combines academic studies in the life sciences, engineering, and brain research with hands-on work in Bar-Ilan labs. Along with a challenging intellectual experience, students also take part in social activities with students from across the country, helping them to develop both personally and intellectually, and to increase their motivation to pursue a career in the academic-research community.



# ACADEMIC EXCELLENCE: PRIZES & AWARDS

**Bar-Ilan is proud to congratulate our faculty who were recognized for their accomplishments this year:**

**Prof. Noa Aharony**, the Department of Information Science, for her appointment as the Israeli representative to the European Cooperation in Science and Technology's European Network for Gender Balance in Informatics.

**Dr. Gilad Asharov**, the Department of Computer Science, for winning the European Union's Marie Skłodowska-Curie Fellowship.

**Dr. Dana Atzil-Slonim**, the Department of Psychology, for winning the Early Career Award from the Society for Psychotherapy Research.



**Prof. (Emeritus) Doron Aurbach** of the Department of Chemistry was awarded the 2020 Israel Chemical Society's Gold Medal, the most prestigious prize granted to an Israeli chemist, for his breakthrough contributions to non-aqueous electrochemistry, his development of novel analytical tools, and his invention of new rechargeable batteries and electrochemical processes for water treatment.

**Prof. Liat Ayalon**, the Gabi and Louis Weisfeld School of Social Work, for her appointment to the advisory committee on senior citizens the Ministry of Social Equality and the advisory committee on the long-term care of the elderly to the World Health Organization.

**Dr. Ofek Birnholtz**, the Department of Physics, for winning the Alon Prize.

**Prof. Shlomo (Steve) Brenner**, the Department of Geography and Environment, for his appointment as Israeli representative to the international Scientific Committee on Oceanic Research.

**Prof. Idan Breier**, the Israel and Golda Koschitzky Department Jewish History and Contemporary Jewry, for his appointment as Full Fellow of the Oxford Center for Animal Ethics.

**Prof. Elise S. Brezis**, head of the Aharon Meir Center for Banking of the Department of Economics, for winning the 2020 Elinor Ostrom Prize.

**Prof. Gal Checkik**, the Leslie and Susan Gonda Multidisciplinary Brain Research Center, and **Dr. Ethan Fetaya**, the Alexander Kofkin Faculty of Engineering, for winning in the Outstanding Article category of the International Conference in Machine Learning.

**Prof. Cyrille Cohen**, the Mina and Everard Goodman Faculty of Life Sciences, for his appointment as member of the Ministry of Health's National Committee on Clinical Trials for COVID-19 Vaccines and for his appointment as president of The Israel Society for Cancer Research.

**Prof. Eliyahu Cohen**, the Alexander Kofkin Faculty of Engineering, for his membership in the Program for the Absorption of Professors in Quantum Science and Technology.

**Prof. (Emeritus) Stuart Cohen**, the Department of Political Studies, for winning the Lifetime Achievement Award from the Association of Researchers for Civil-Military Relations in Israel.



**Prof. Tsilly Dagan** of the Faculty of Law, for winning 2021 Heshin Prize for Academic Excellence.

**Dr. Nomy Dickman**, the Azrieli Faculty of Medicine, for her appointment as European representative of the international Team-Based Medical Education Collaborative.

**Prof. Moran Dvela-Levitt**, the Mina and Everard Goodman Faculty of Life Sciences, for winning the Alon Prize and the 2020-2021 Zuckerman Faculty Scholar.

**Prof. Julia Elad-Strenger**, the Department of Political Studies, **Dr. Ziv Bohrer**, the Faculty of Law, **Prof. Isaac Hershkowitz**, the Department of Jewish Philosophy, and **Prof. Amit Shrira**, the Interdisciplinary Department of Social Sciences, for

their appointment as members of the National Academy of Sciences' Forum for Young Academics in the Humanities and Social Sciences.

**Prof. Tzipora C. Falik-Zaccai**, vice dean of Medical Research, The Azrieli Faculty of Medicine, for her appointment as a member of Ministry of Health's Helsinki Committee.

**Prof. Evan Fallenberg**, the Department of English Literature and Linguistics, for winning the Bogliasco Foundation Fellowship.

**Prof. Miriam Faust**, former Rector of Bar-Ilan University, the Department of Psychology and the Leslie and Susan Gonda Multidisciplinary Brain Research Center, for her appointment as chairperson of the Council for Higher Education's Committee for the Appointment of Social Science, Management, and Law Professors.

**Prof. Yuval Feldman**, the Faculty of Law, for winning, together with Prof. David Enoch from the Hebrew University of Jerusalem, the 2021 Joseph Fattal Prize for Outstanding Legal Research in the Legal Theory.

**Prof. (Emeritus) Yehuda Friedlander**, the Joseph and Norman Berman Department of Literature of the Jewish People, for his appointment as chairperson of the Council for Higher Education's Committee for the Appointment of Education, Humanities, and Arts Professors.

**Prof. Sharon Gannot**, the Alexander Kofkin Faculty of Engineering, for his appointment as an Institute of Electrical and Electronics Engineering Fellow and for his article being selected as "Outstanding Article" by the Journal of the Acoustical Society of America.

**Prof. Uriel Gellman**, the Israel and Golda Koschitzky Department of Jewish History and Contemporary Jewry, for winning the Zalman Shazar Prize for Jewish History for his book *The Emergence of Hasidism in Poland*.



**Prof. (Emeritus) Eliezer (Ed) Greenstein** of the Zalman Shamir Department of Bible was awarded the 2020 EMET Prize—known as "Israel's Nobel"—for his "extraordinary ability to integrate various disciplines in biblical research," and his new translation and original commentary on the Book of Job won the award from the Association for Jewish Studies.



## Impact on Research



**Prof. Zehavit Gross**, the Pinkhos Churgin School of Education, for winning the Ben-Gurion University of the Negev Israeli Hope Prize for Advancing Cooperation in Israeli Society for her project to encourage Jewish-Arab dialogue.

**Prof. Yaron Harel**, dean of the Faculty of Jewish Studies, the Israel and Golda Koschitzky Department of Jewish History and Contemporary Jewry, for winning the 2020 Prime Minister's Award for the Study of Israeli Communities in Arab Countries and Iran for his book *Zionism in Damascus: Ideology and Activity in the Jewish Community at the Beginning of the Twentieth Century*.

**Prof. (Emeritus) Ephraim Hazan**, the Joseph and Norman Berman Department of Literature of the Jewish People, for winning the Izhak Ben-Zvi Lifetime Achievement Award for the Study of Jewish Communities in the East.

**Prof. Nathan Keller**, the Department of Mathematics, for winning the Israeli Mathematical Union's Anna and Lajos Erd's Prize in Mathematics and for his election as member of the Israel Young Academy.

**Dr. Itay Koren**, the Mina and Everard Goodman Faculty of Life Sciences for winning the Alon Prize

**Dr. Yogev Kivity**, the Department of Psychology, for winning the the Alon Prize and Emerging Young Scholars Award for the third year in a row.

**Prof. Sarit Kraus**, the Department of Computer Science, for winning the Association for Computing Machinery's Athena Lecturer Award.

**Prof. Eric Lawee**, the Zalman Shamir Department of Bible, for winning the Jewish Book Council's Award in the scholarship category.

**Prof. Daniel Levy**, the Department of Economics, for his appointment as president of the Israel Economics Association.

**Prof. Shlomo Margel**, the Department of Chemistry, for winning the 2020 Vebleo Innovation Award.

**Prof. Daniel Nessim**, the Department of Chemistry, for his appointment as president of the Israel Vacuum Society.

**Prof. Shmuel Rafael**, director of the Salti Institute for Ladino Studies, the Joseph and Norman Berman Department of Literature of the Jewish People for his appointment as Academic Secretary of the Israel National Academy for Ladino.

**Prof. Eyal Regev**, the Martin (Szusz) Department of Land of Israel Studies and Archeology, on his appointment as member of Studiorum Novi Testamenti Societas, the International Academy for the Study of Early Christianity.

**Dr. Ariel Rosenfeld**, the Department of Information Science, for his appointment as chairman of the 18th European Conference on Multi-Agent Systems.

**Prof. (Emeritus) Ora Schwarzwald**, the Department of Hebrew and Semitic Languages, for her appointment as president of the Israel National Academy for Ladino.

**Prof. Hizky Shoham**, the Interdisciplinary Program for Hermeneutics and Cultural Studies, for being awarded Best Article Prize from the Society of the History of Children and Youth.

**Prof. Benjamin Shmueli**, the Faculty of Law, for his appointment as president of the Israel Association for Law and Society.

**Prof. Adam Teman**, the Alexander Kofkin Faculty of Engineering, for winning the 2020 Krill Prize.

**Dr. Vered Tohar**, the Joseph and Norman Berman Department of Literature of the Jewish People, for her appointment as the Bar-Ilan University representative to the Scientific Council of the Dov Noy Israel Folktale Archives.

**Prof. Rivka Tuval Mashiach**, the Department of Psychology, for winning the 2020 medal from Women's Spirit for her volunteer work on behalf of gender equality in Israel.

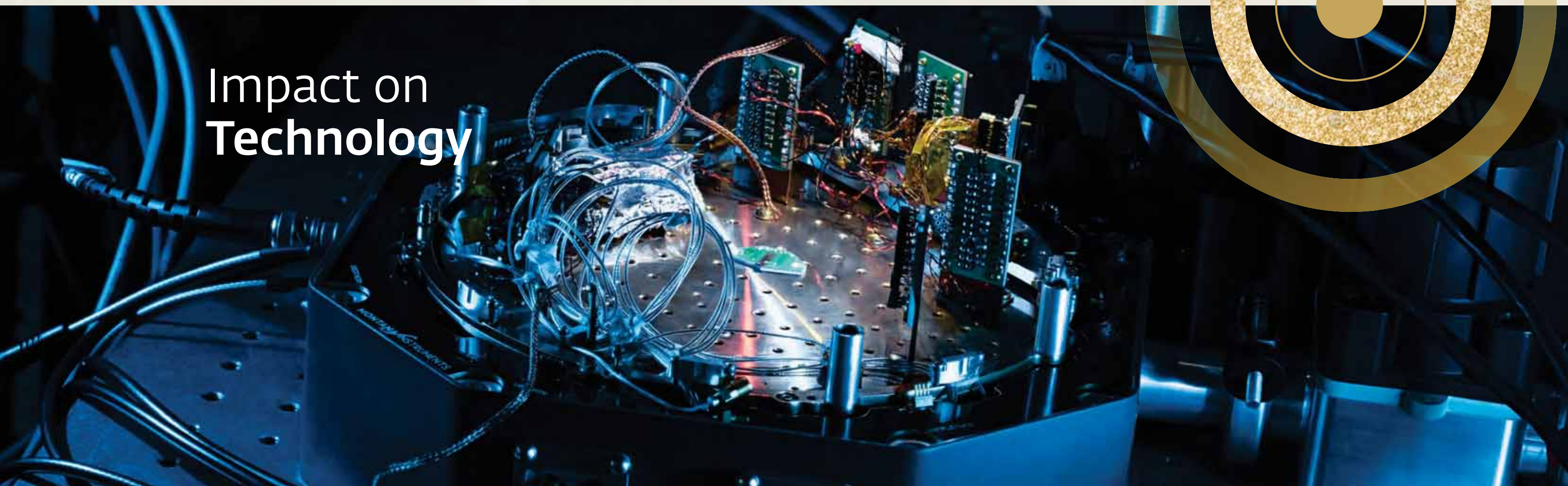
**Prof. Tamar Wolf-Monzon**, the Joseph and Norman Berman Department of Literature of the Jewish People, for her appointment as a member of the Board of Directors of the National Library of Israel.

**Prof. Eyal Yaniv**, the School of Business Administration, for his appointment as chairperson of the Inter-University Computation Center.

**Prof. Avinoam Zadok**, the Alexander Kofkin Faculty of Engineering, for his appointment as member of the National Academy of Sciences' committee for examining the role of the academia in supporting decision-making systems in Israel in times of national crisis.

**Prof. Zeev Zalevsky**, dean of the Alexander Kofkin Faculty of Engineering received the Edison Award™ for Zsquare, his ultra-thin, flexible, high-resolution single-use endoscope that improves usability and diagnosis quality while eliminating the risk of infections and dramatically reducing healthcare costs. He also won the Institute for Electrical and Electronics Engineering's Outstanding Lecturer Award and the Vebleo Award for outstanding researchers who are mid-stage in their careers and leaders in their respective fields.

# Impact on Technology





## We are pleased to congratulate our students who were recognized for their achievements:

**Elisheva Berkowitz**, the Alexander Kofkin Faculty of Engineering, and **Oshrit Shtusel**, the Department of Mathematics, for winning the 2021 Fellowship for Outstanding Female Masters Students in Hi-Tech.

**Dana Binyamin**, the Azrieli Faculty of Medicine, and **Gil Bashan**, the Alexander Kofkin Faculty of Engineering, for winning the 2021 ADAMS Academy Fellowship.

**Omer Caspi**, the Department of Chemistry, and **Lior Bracha**, the Leslie and Susan Gonda Multidisciplinary Brain Research Center, for winning the Israel Council for Higher Education's 2021 Scholarship for Outstanding PhD students in Data Science.

**Shiran Chugi and Shalom Hillel Roth**, the Mina and Everard Goodman Faculty of Life Sciences, and **Ohad Klein**, the Department of Mathematics, for winning the 2021 Clore Prize.

**Abbed Elhadi Saadia and Nasser Mulhaam**, the Department of Chemistry, for winning the 2021 Scholarship for Outstanding Arab Postdoctoral Students.

**Daniel Fuchs**, the Martin (Szusz) Land of Israel Studies and Archaeology Department, and **Maya Yablonsky**, the Leslie and Susan Gonda Multidisciplinary Brain Research Center for winning the Rothschild Postdoctoral fellowship.

**Hila Gonen Gal**, the Department of Computer Science, for winning the Rothschild Scholarship for Computer Science.

**Fatima Salach Hamuda**, the Department of Physics, for winning the 2021 Scholarship for Outstanding Arab and Minority PhD Students.

**Dr. Shir Hochold-Lieber**, the Alexander Kofkin Faculty of Engineering, and **Dr. Natanel Spiegel**, the Department of Chemistry, for winning the 2021 Postdoctoral Scholarship of the Israel Academy of Science.

**Itamar Holtzman and Motbeiba Polina**, the Department of Physics, for winning the 2021 Scholarship for Outstanding PhD Students in Quantum Science and Technology.

**Yaron Kahalani and Shira Pilo**, the Department of Psychology, for winning the 2021 Masters Scholarship for Outstanding Haredi Graduate Students.

**Olga Kreichman**, School of Optometry and Vision Science, for winning the Prof. Nehemia Levtzion Prize for Outstanding PhD Students from the Periphery.

**Bracha Laufer-Goldstein**, the Alexander Kofkin Faculty of Engineering, for winning the Israel Council for Higher Education's 2021 Scholarship for Outstanding Postdoctoral Students in Data Science.

**Tehila Leiberman**, the Martin (Szusz) Land of Israel Studies and Archaeology Department, **Yonatan Carmeli**, the Department of Middle Eastern Studies, and **Rachel Tal**, the Department of Hebrew and Semitic Languages, for winning the 2021 Nathan Rotenstreich Scholarship for Outstanding PhD Students in the Humanities.

**Ayelet Peres and Tal Ben-Uliel**, the Alexander Kofkin Faculty of Engineering, for winning the 2020 Scholarship for Female Doctoral Students in Hi-Tech.

**Rotem Rosenblatt and Ziv Orpaz**, the Mina and Everard Goodman Faculty of Life Sciences, for winning the 2021 Azrieli Award for outstanding PhD students.

**Ohad Scheinfeld and Lior Hadassi**, the Department of Mathematics, for winning medals in the International Mathematics Olympiad.

**Ofir Shteygman**, the Faculty of Law and the Department of Mathematics, for winning the Israel President's Scholarship for Excellence and Scientific Innovation.

**Lila Suleiman**, the Mina and Everard Goodman Faculty of Life Sciences, and **Milham Lama**, the Azrieli Faculty of Medicine, for winning the 2021 Scholarship for Outstanding Arab Graduate Students.

**Tioari Srishti, Avahisk Bendiopodi, Mokash Kumar, Gavnon Zang, and Anshu Siruhi**, the Department of Physics; **Suman Madjhi**, the Department of Mathematics; **Sumith Madjadar**, the Department of Chemistry; **Svitha Pawer and Ahor Yahdav**, the Alexander Kofkin Faculty of Engineering; and **Manfrit Kauer**, the Department of Geography and Environment, for winning the Israel Council for Higher Education's 2021 Award for Outstanding PhD students from India and China.

**Noga Tyuto**, the Mina and Everard Goodman Faculty of Life Sciences, for winning the Eshkol Prize for outstanding PhD students.

**Ruti Vandimangan**, the Pinkhos Churgin School of Education, and **Danny Admaso**, the interdisciplinary Program for Hermeneutics and Cultural Studies, for winning the Israel Council for Higher Education's 2021 Scholarship for Outstanding PhD students from Ethiopia.

**Moriah Waltstein Zeltzer**, the School of Communication, for winning the Israel President's Scholarship for Excellence and Scientific Innovation.

## The following departments were also recognized this year:

The Department of French Culture, for including Bar-Ilan University as a member of the University Agency of the Francophone (AUF).

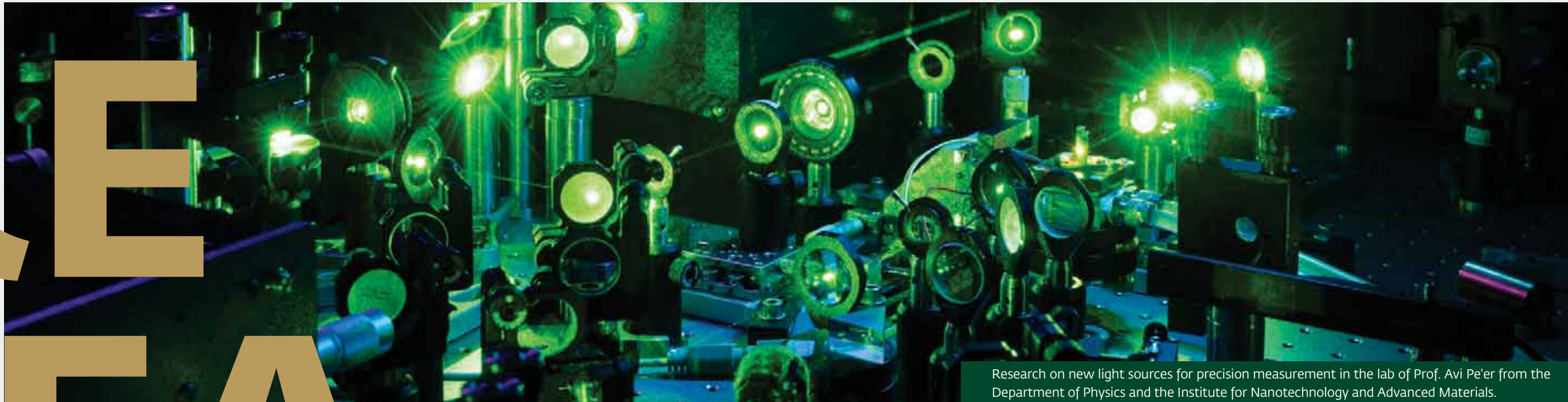
The Department of Business Administration, for obtaining the European Union's recognition of the Smart Cities Center as the first Digital Innovation Hub in Israel.

# Impact on Society





# RESEARCH



Research on new light sources for precision measurement in the lab of Prof. Avi Pe'er from the Department of Physics and the Institute for Nanotechnology and Advanced Materials.

## Turning Ideas into Impact

A new Israel-U.S. research consortium and a collaboration with the UAE's Khalifa University: For Bar-Ilan's National Institute for Sustainable Energy (NISE), 2020 was a banner year. Electrochemist Prof. Doron Aurbach—whose own research group published more than 40 papers and received more than 10,000 citations this year alone—calls it “the most prolific year yet.” His explanation for the success, however, says more about the University's approach to research than it does about any one department or research group. “Scientific work is cumulative,” explains Aurbach, “and at Bar-Ilan, nothing is allowed to get in the way of progress.”

In fields that advance Israel's national scientific agenda, such as computer science, quantum physics, and precision medicine, Bar-Ilan added several new returning scientists. It also received numerous glue grants for multidisciplinary research, including 14 for COVID-related studies involving the faculty from the life sciences and medicine and 21 for work in such cutting edge fields as natural language processing, bioinformatics, and artificial intelligence. The University also hired two new coordinators to help researchers identify and apply for funding, resulting in a 45% increase in applications for European Research Council (ERC) grants and a 64% increase in papers submitted for publication to scientific journals.

Bar-Ilan also launched three multidisciplinary Impact Centers, each the result of years of efforts to build a base of knowledge around an area of national or global concern. They include the Minerva Center for the Physiology of Aging, whose researchers are working to prevent age related disease; the Archaeological Botany Center, which studies ancient seeds for both new understandings of the past and new possibilities for future agricultural practices; and the Bar-Ilan – Retorno Therapeutic Research Center, which integrates research from the Faculty of Social Sciences into patients' clinical care in search of more

effective addiction therapies.

In addition, Bar-Ilan's UnBox program for turning researchers into entrepreneurs helped eight Bar-Ilan researchers establish their own startups this year. They include Dr. Baruch Barzel of the Department of Mathematics, whose company Greatnix offers hospitals a system for ensuring the optimal use of resources and reducing both bottlenecks and infection rates among staff; and cognitive neuroscientist Dr. Eugene Brozgol of the Physics Department, whose company Daru Labs' provides a bundled microscopy unit and smartphone application to rural African health clinics. The technology offers a means to fast, accurate diagnoses even without a doctor at the point of care.

Finally, Bar-Ilan's tech-transfer company BIRAD generated a critical revenue stream for University investors this year with the exit of two startups whose intellectual property came from Bar-Ilan: President Arie Zaban's technology for turning metals like aluminum and zinc into a way to store, transport, and generate clean energy, and Prof. Gal Kaminka's robotic technology for cleaning and monitoring solar panels. The latter came just in time for Bar-Ilan's Renewable Roofs Project, which uses solar panels to generate clean energy and significant savings for the University.



**Prof. Shulamit Michaeli**  
VP for Research



# RENEWABLE ENERGY RESEARCH

## The Brains Behind an Energy Revolution

### Prof. (Emeritus) Doron Aurbach

Prof. Doron Aurbach, a world renowned electrochemist and materials and surface scientist, provided key contributions to both the basic research behind the lithium-ion batteries—now standard issue in mobile phones and computers—and the development of its commercial (Li-ion) version. His H-Index, the accepted metric for measuring and comparing a scientist's overall productivity, is 130, more than three times the number considered "outstanding," and his 680 peer reviewed publications have been cited more than 68,000 times. He was the first Israeli to be awarded the prestigious Eric and Sheila Samson Prime Minister's Prize for Innovation in Alternative Fuels for Transportation in 2018 and is also the recipient of the 2018 Alexander Frumkin Medal and the 2017 Allen J. Bard award, the highest awards in electrochemical sciences. In the 2020 ranking by the preeminent scientific journal PLOS of the world's top 100,000 scientists, Prof. Aurbach was declared the second most influential of all researchers in Israel.

### Prof. Lior Elbaz

Considered one of Israel's most promising young researchers, Prof. Lior Elbaz introduces the use of advanced materials into fuel cells, making them more durable and efficient. He is head of the Israeli Fuel Cells Consortium, the director of 12 different research labs across Israel, and the official Israeli representative to the International Energy Agency's Executive Committee for Advanced Fuel Cells. He is currently developing fuel cells for both the Israeli Defense Forces and for industry, and is involved in a drone project initiated by the Israel Directorate of Defense Research and Development.

### Prof. Malachi Noked

Prof. Malachi Noked is head of a Bar-Ilan lab that designs next generation electrodes for batteries and rechargeable metal anodes. The recipient of the prestigious Yigal Alon Fellowship for young scientists, he was appointed head of all Israeli groups involved in a five year research consortium for the development of solid state batteries, funded jointly by the United States Department of Energy and the Israel-U.S. Binational Industrial Research and Development Foundation (BIRD), and comprising members from both academia and industry.

### Prof. Adi Salomon

Prof. Adi Salomon of Bar-Ilan's Institute for Nanotechnology and Advanced Materials (BINA) combines surface chemistry, advanced nanotechnology, and non-linear optics and imaging for the development of advanced optical materials. She was elected one of the 50 most influential women in Israel in 2017 and received the Krill Prize from the Wolf Foundation in 2018 and the Tenne Prize for Nano-Scale Sciences in 2020.

### Prof. David Cahen

Prof. David Cahen researches the chemical means to design, modify, and control the electronic and optical properties of materials for solar cells. Along with his work at Bar-Ilan, Cahen leads a group at the Weizmann Institute of Science that is researching new solar cell material possibilities. His findings have contributed to the basic understanding and practical use of several types of solar cells.

The people,  
projects, and plans  
behind Israel's  
energy research  
powerhouse.



Profs. Malachi Noked, Doron Aurbach and Lior Elbaz from the Department of Chemistry and the Institute for Nanotechnology and Advances Materials, leaders in renewable energy research.





Prof. Adi Salomon from the Department of Chemistry and the Institute for Nanotechnology and Advanced Materials, who is developing next generation optical materials.

## Building a National Resource: NISE

The concentration at Bar-Ilan of so many of Israel's leading energy scientists led to the decision, several years ago, to establish the National Initiative for Sustainable Energy (NISE). "We all could have continued to do our own energy research, and there's no question we would have developed important technologies," says Prof. Doron Aurbach, head of energy research at Bar-Ilan. "But it's the nature of Bar-Ilan always to think bigger, and to aim for the kind of impact that comes with working collaboratively."

A first of its kind R&D initiative, NISE is designed to maximize the potential of Israel's leading energy scientists, entrepreneurs, and engineers. Through collaborations with international companies, Israeli startups, and Bar-Ilan's accelerator UnBox, NISE aims to move energy technologies from the lab to the production line in the shortest possible time. The resulting technologies—from cars that run on clean energy sources to cities powered by microgrids based on photovoltaic cells—will demonstrate that academic excellence paired with industry can be an unstoppable engine for innovation. Moreover, NISE maximizes Bar-Ilan's resources as a comprehensive university: By including researchers from fields such as network science, geography, environmental studies, law, and artificial intelligence, NISE helps ensure that the full complexity and implications of a given energy challenge are understood, and more integrated solutions proposed.

**“WE EACH COULD HAVE CONTINUED TO DO OUR OWN ENERGY RESEARCH, AND THERE'S NO QUESTION WE WOULD HAVE DEVELOPED IMPORTANT TECHNOLOGIES. BUT IT'S THE NATURE OF BAR-ILAN ALWAYS TO THINK BIGGER, AND TO AIM FOR THE KIND OF IMPACT THAT COMES WITH WORKING COLLABORATIVELY.”**

## Remaking the Middle East: A Partnership with the UAE

Thanks to the ongoing strategic efforts of Bar-Ilan's leadership to forge collaborations, NISE is already expanding in dramatic ways, this time with partners in the UAE. In December, NISE and Khalifa University in Abu Dhabi agreed to begin joint efforts in energy related research, including technologies for large energy storage, electromobility, renewable energy harvesting and hydrogen economy. With plans for future faculty and student exchanges, the agreement began with a series of virtual meetings between both universities' energy scientists in February of this year.

According to Bar-Ilan President Arie Zaban, the Bar-Ilan Khalifa partnership can serve as the anchor of a new Middle Eastern sustainable energy eco-system, with dramatic implications for not only the future of energy, but the future of the region as a whole. "As a bridge between academia and industry, and between Israel and the UAE, our agreement can facilitate the establishment of regional initiatives, programs, and companies that will lead to substantial economic growth, and make the Middle East the world's hope for a more sustainable, prosperous, and peaceful future for us all."

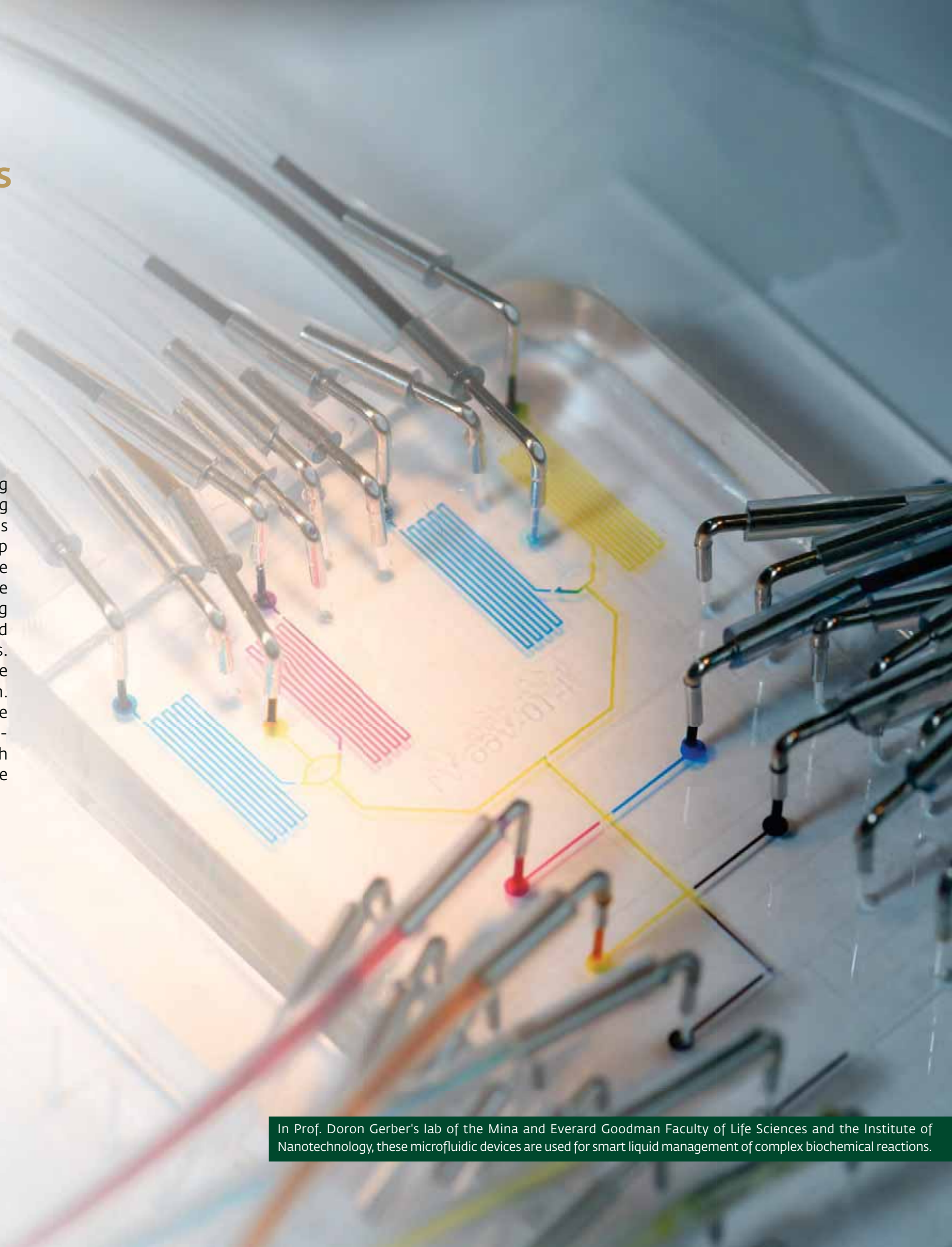
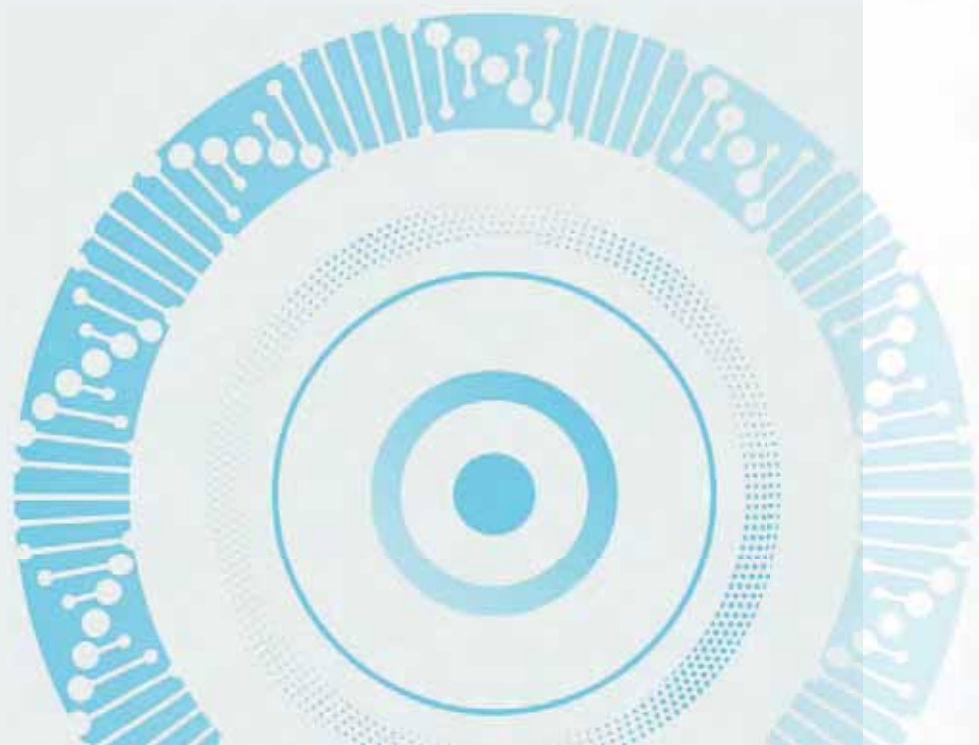


# BIO-CONVERGENCE AND THE FUTURE OF HEALTHCARE

Bar-Ilan researchers are improving outcomes for patients—and for Israel's healthcare system, too.

## The Magic in the Middle

Bar-Ilan is home to nearly 50 scientists working in the field of “bio-convergence,” or engineering inspired by nature. Nourished by the University's tradition of translational science and the startup spirit that animates its science faculties, these researchers are bridging the gap between the life sciences and medicine, and engineering and computer science to develop advanced diagnostic and therapeutic technologies. Together, these innovations can change the way we treat problems in human health. But for Israel, they offer much more: Like the Internet revolution before it, the emerging “bio-convergence” revolution can become a growth engine for the hi-tech sector—and reduce the state's soaring healthcare costs.



In Prof. Doron Gerber's lab of the Mina and Everard Goodman Faculty of Life Sciences and the Institute of Nanotechnology, these microfluidic devices are used for smart liquid management of complex biochemical reactions.



## Engineering



### **Prof. Rachela Popovtzer** "Smart" Nanoprobes

Rachela Popovtzer, vice dean of the Alexander Kofkin Faculty of Engineering, is synthesizing gold nanoparticles covered with molecules that link to cancer markers. After the nanoparticles are administered to a patient by IV, they travel directly to the cancer cells, cover their membranes with gold, and create an unmistakable signal on the radiologist's CT image.



### **Prof. Orit Shefi** Controlled Drug Delivery

Orit Shefi and her team from the Alexander Kofkin Faculty of Engineering are creating magnetic nanomaterials that interact with anti-cancer drugs and can be directed remotely to tumors. These materials will increase the concentration of cancer drugs in the areas of the body that need it, while decreasing both the drug's effects on healthy tissue and the resulting side effects.



### **Dr. Shahar Alon** Spatial Genomics

Through the combined efforts of engineering, biology, physics, computer science, and chemistry, Shahar Alon from the Alexander Kofkin Faculty of Engineering, Gonda Multidisciplinary Brain Research Center, and Institute of Nanotechnology and Advanced Materials is mapping the relative position of molecules to each other in cancerous tissue. He aims to produce large scale datasets that can help identify new treatments for cancer.



### **Prof. Zeev Zalevsky** High Resolution Imaging

Zeev Zalevsky, dean of the Alexander Kofkin Faculty of Engineering, designed a camera that can deduce nano vibrations by illuminating an inspected tissue and capturing images of the back scattered patterns. The technology offers a safe, easy way to measure biomedical parameters indicative of disease and avoid the need for invasive and expensive biopsies.

## Novel Medical Tools and Therapies



## Medicine and Life Sciences



### **Prof. Karl Skorecki** Big Data Diagnostics

Having already discovered the genotype that indicates high risk for diabetes in populations with African ancestry, Karl Skorecki—the dean of Bar-Ilan's Azrieli Faculty of Medicine—and his team of population geneticists, virologists, and experts in mathematical modeling and computational science can now identify the biomarker profiles for progression from risk to disease, a first step in preventative care.



### **Dr. Yaakov Maman** Genomic Cancer Maps

By using genomic testing and computational modeling to study the landscape of a cancer cell's DNA lesions, Yaakov Maman of the Azrieli Faculty of Medicine is developing a statistical model for quantifying the vulnerability of the lymphoid genome. The model will be used to help predict the genetic predisposition to cancers and to pinpoint novel targets for therapy.



### **Prof. Ehud Banin** Treatments for Drug-Resistant Bacteria

Together with material scientists, chemists, and engineers, Ehud Banin of the Mina and Everard Goodman Faculty of Life Sciences is using nanotechnology to develop new materials for treating multidrug-resistant bacteria. Several of these technologies have already been licensed and developed for use in breathing masks, bandages, medical devices, and textiles.



### **Prof. Gal Yadid** Remote Controlled Nanoparticles

Gal Yadid of the Mina and Everard Goodman Faculty of Life Sciences is developing a system that allows for both the remotely controlled implantation of nanoparticles in the brain and the controlled release of anti-depressants. The system offers a new approach to treating, even curing, depressive disorders.



# THE TOP OF THEIR GAME: ERC GRANTS

This year, the prestigious European Research Council received 2,506 research proposals from scientists around the world, just 13 percent of which were awarded funding. Four of the winners are advancing research in microbiome, photonics, protein degradation, and sense of reality (SoR) at Bar-Ilan.

**Prof. Omry Koren**  
**The Azrieli Faculty of Medicine**

€2 Million Consolidator Grant

**Unraveling the Mystery of Aggression**

Scientists agree that aggression is one of the most important social behaviors for survival in nature. What they can't agree on, however, is the precise combination of genetic factors and neural mechanisms that cause it. Koren and his team have recently linked microbiota—the constellation of microorganisms in the gut—to behaviors such as risk taking and mating, as well as hormone production and secretion. By studying the effects of antibiotics and specific microbes on aggression in mice and flies, Koren's lab believes it can help unravel the causes of aggression and the means to its moderation in the human species.

**Prof. Avi Zadok**  
**The Alexander Kofkin Faculty of Engineering and the Institute for Nanotechnology and Advanced Materials**

€2 Million Consolidator Grant

**Enabling Tomorrow's Communication and Computation**

The integration of silicon circuits and electronics has redefined human society since the second half of the twentieth century. In the last decade, silicon circuits have also supported photonics, or the use of light to share massive amounts of data between memory devices, computers, and processors. Zadok and his team now aim to add yet another dimension to silicon devices: acoustic waves. The integration of sound waves alongside light and electronics would enable even better processing and more effective sharing of information, as well as new lab-on-a-chip technology and breakthroughs in material science.



**Dr. Roy Salomon**  
**The Leslie and Susan Gonda Multidisciplinary Brain Research Center**

€1.5 million ERC Starting Grant

**Modeling Our Sense of Reality**

The ability to discriminate between true and false perceptions of the world is a central criterion for neurological and psychiatric health. Despite the critical role of the sense of reality (SoR) in our daily life, however, relatively little is known about how it is formed in the mind and brain. Through a virtual reality environment that allows for the precise and controlled manipulations of visual reality across different domains, Salomon's team is building a phenomenological, computational, and cerebral model of our perception of reality. By comparing the neural mechanisms underlying SoR with high-resolution fMRI, they hope to describe the processes involved in the SoR in healthy people, as well as to develop treatments for clinical populations that suffer from damage to this mechanism.

**Dr. Itay Koren**  
**The Mina and Everard Goodman Faculty of Life Sciences**

€1.8 Million ERC Starting Grant

**Understanding the Role of Protein Breakdown in Disease**

Proteins are the molecules that do most of the work in our bodies. The survival of an organism therefore depends on the maintenance of its proteins: Unwanted or damaged proteins need to be degraded and replaced by the synthesis of new proteins. When this process is unregulated, it runs the risk of promoting disease. The Koren lab is creating tools to monitor, in real time, the total set of proteins of a living cell, allowing for the identification of protein degradation regulators. This insight will offer a key to understanding the impact of dysfunctional proteins at the molecular level and on human disease, as well as to develop novel therapeutic intervention strategies.



# RESEARCH FOR REHABILITATION

How Bar-Ilan's innovative research-clinical care partnership offers hope for more effective addiction therapy.

Thanks in large part to the Israeli psychologist and Harvard lecturer Tal Ben-Shahar, the field of Positive Psychology, or the study of what makes people feel happy and fulfilled, has made significant inroads in both academia and the wider culture over the last decade. Now, pioneering researchers from Bar-Ilan are applying the field's principles to a very different discipline, convinced that rehabilitation takes root not only when we venture into the mind's dark places, but also—if not more so—when we explore its sources of happiness and strength. And thanks to a new research-clinical partnership, they're about to find out if they're right.

Prof. Natti Ronel, head of the Department of Criminology and the founding father of the Positive Criminology movement, and Dr. Tomer Einat inaugurated a collaboration with the residential therapeutic community Retorno this year. Modeled on the famous 12-step program, it is home to nearly 150 youth, religious and secular adults, and Jewish and Arab patients from across Israel's socio-economic spectrum. Retorno—which means "U-Turn" in Spanish—was founded by Rabbi Eitan Eckstein, one of the world's foremost experts on addiction and son of the late Prof. Shlomo Eckstein, the renowned economist and former President of Bar-Ilan. By integrating research on therapeutic interventions into Retorno patients' care, Ronel, Einat, and Bar-Ilan faculty from fields such as social work, education, and law can evaluate the

efficacy of both existing and new therapies, and recommend refinements in line with the results. Moreover, thanks to Prof. Oren Glickman of the Bar-Ilan Data Science Institute, their findings, together with an array of physical data on each patient, will be included in an inter-disciplinary addiction database, whose large data sets can reveal not only what works best for individuals, but also for entire communities.

Among the first studies undertaken with Retorno patients is one that explores what causes adolescents to drop out of drug treatment programs at such high rates, and another that assesses the role of parents' attitudes in their adolescents' recovery. It is studies like the latter, Ronel points out, that show the enormous potential of Positive Criminology's principles to effect change in the rehabilitative field. "Our findings challenge the prevalent myth in the field of drug addiction that family members cannot influence change in a relative's substance abuse," says Ronel. "On the contrary, they demonstrate the potential of accepting relationships to pull him or her out of the spiral of self-centeredness and alienation." These studies, concludes Ronel, can enhance the work of both individual therapists and institutions that deliver services for addicts in Israel. "This research can help addicts make a U-turn in life. What," wonders Ronel, "could be more important than that?"

The Retorno rehabilitation center in the Judean Hills.





# GRAPES, BARLEY, AND THE FUTURE OF AGROTECHNOLOGY



Prof. Ehud Weiss



Barley grain from the Yoram Cave, the Chalcolithic Period, approximately 6,000 years old.

**“IF WE CAN FIND A GENE THAT MAKES A CROP HEARTIER AND IN NEED OF MUCH LESS WATER, WE CAN ENGINEER THEM TO GROW IN PLACES AROUND THE WORLD WHERE THERE IS A LACK OF EFFECTIVE IRRIGATION METHODS.”**

“In just the last decade, we’ve been able to prove that in the ancient Land of Israel, our forefathers cultivated native grapevines. By matching ancient grape seeds with feral grapevines that grow wild in Israel today, we now know that King David did not drink European wine. He didn’t need to: The Jews in biblical times were every bit the sophisticated vintners. And if we can revive those ancient varieties of native Israeli grapes, both Jews and non-Jews today, when they choose a Mount Hermon over a Merlot, will do so not because it’s kosher, or because they want to support Israel. They will drink Israeli wine,” he concludes with a flourish, “because it’s the real thing.”

**How the ancient seeds in Bar-Ilan’s Archaeological Botany Impact Center’s collection can transform the wine industry in Israel—and address food insecurity around the world.**

What the Israeli-wine market is missing, insists Prof. Ehud Weiss, is a story. Fortunately, he has a good one. “All of the wine that we drink today comes from grapes whose vines originated in the Caucasus Mountains. The Phoenicians carried wine cultivars to Greece, France, and Rome, and the Romans then spread the vines throughout Europe. The assumption, if you’ll forgive the pun, is that the rest was history,” says Weiss, an archaeological botanist in the Faculty of Jewish Studies’ Martin Szusz Department of Land of Israel Studies and Archaeology and head of the University’s archaeological botany laboratory. The only one of its kind in the country, the lab is studying the ancient grape seeds found at Israel’s archaeological sites.



The archaeological-botany lab contains more than 1.5 million ancient seeds and grains.



“THE IMPULSE IS TO CALL IT EITHER A MIRACLE OR MYTHOLOGY, BUT THERE MAY WELL HAVE BEEN SOMETHING AT THE GENETIC LEVEL OF THE WHEAT ITSELF.”



Wheat and barley from Timna, the Iron Age, approximately 3,000 years old.

Whether wine connoisseurs will make the transition from a Chardonnay to a Hamdani or Bittuni remains an open question. What Weiss is certain of, however, is that everyone will embrace the potential of ancient seeds to fuel new agrotechnologies. “We know that gene loss occurs over time, and that the genome of an ancient grain seed likely has more and different genes than the seeds we plant today. If we can find those genes and figure out what they did, the possibilities for today’s agricultural processes can be remarkable,” Weiss says. For example, among his referenced collection of ancient plants are desiccated barley seeds found at the face of Masada’s southern cliffs. Subsequent gene sequencing revealed that this was the earliest strain of the domesticated grain. Now, Weiss hopes to find the genes that were coded for productivity.

“If we can find a gene that makes a crop heartier and in need of much less water, we can engineer them to grow in places around the world where there is a lack of effective irrigation methods.” Such a crop, Weiss points out, can play a critical role in combatting food insecurity. The same goes for today’s bread, which, as anyone who has left it out overnight knows, loses its freshness all too fast. Yet, points out Weiss, the showbread of the Jewish Temples was known to have stood in the open air for a week without becoming stale. “The impulse is to call it either a miracle or mythology, but there may well have been something at the genetic level of the wheat itself,” says Weiss. Fortunately, among the finds at King Herod’s Masada were ancient grains of wheat, whose genomes may hold an answer.



The archaeological-botany lab's reference collection.



The archaeological-botany laboratory's research team.

“From one ancient grain, a new way of understanding our past and improving our future can grow,” he concludes. “This kind of research, which blends scientific innovation with a deep interest in and value for our Jewish heritage, is exactly what Bar-Ilan is about. It is our unique gift to the world.”



# ISRAEL'S GENOME BANK FOR PERSONALIZED MEDICINE

**Housed at Bar-Ilan, the national center for genetic sequencing can pave the way for personalized medicine for all of Israel's diverse populations.**

Psifas, which means "mosaic" in Hebrew, is a first of its kind, precision medicine collaboration among Israel's universities, the Ministry of Health, the Israel Innovation Authority, the National Digital Israel Initiative, the Medical Corps, the Ministry of the Treasury and the country's bio-industry. Using health data and biological samples from hundreds of thousands of volunteers comprising all the country's different ethnicities, Psifas's national center for genetic sequencing, housed at Bar-Ilan, is building a genomic clinical database that will fuel research into individual and population-specific therapies. Such targeted treatments can vastly improve the efficacy of medical care, while greatly reducing the risk of adverse effects and the soaring costs of healthcare. Moreover, by leveraging tools in artificial intelligence—a field in which Bar-Ilan is a national leader, and a key reason for its selection from among all Israeli universities—big data researchers can detect physiological patterns that reveal disease-causing genetic variations. These patterns can be game changers in the areas of personalized treatment and preventive medicine.

Psifas also aims to collect the medical data of virtually all of Israel's eight million citizens in a comprehensive digital patient database. Containing information on conditions from cancer and auto-immune disorders to the rarest of diseases, the pool of data from more than eight million citizens will be processed anonymously, and provided to academics, biotech companies, and medical startups for research and development.





# THINKING JEWISH, NEAR AND FAR

Bringing Levinas into conversation with Kook, and medieval manuscripts into the digital age: Bar-Ilan's Department of Jewish Philosophy shows that Jewish thought from every time and place can be relevant to the here and now.



Dr. Yehuda Halper, whose software program aids in the study of medieval texts

## A Digital Reading of Ancient Texts

Dr. Yehuda Halper of the Department of Jewish Philosophy is a scholar of Judaism and Islam in the Middle Ages and Renaissance, developed a software program for displaying an editor's reconstruction of a medieval text. The program allows for ease of comparison between these reconstructions and the versions that were actually read. It also enables scholars to display commentaries and marginalia alongside the main text, bringing all parts of the scholarly process together on one screen.

## A Program for Social Jewish Philosophy

As part of the department's new Program for Social Jewish Philosophy, which allows undergraduates to combine studies in Jewish philosophy with social action, students in the Department of Jewish Philosophy organized a virtual beit midrash for Jewish prisoners who wish to learn about Jewish ethics and Israeli society as part of their rehabilitative process. The project also hosted a virtual meeting with the director of a philosophy program for prisoners in the United States.

## A Forum for Cross-Cultural Discourse

Through special courses, monthly meetings, guest lectures, an international conference, and individual research, PhD and postdocs in the department's Matanel Forum explore the differences and similarities between the schools of Jewish thought that developed in France and in Eretz Yisrael in the late nineteenth and early twentieth centuries. The Forum aims to create a more integrated and inclusive contemporary Jewish philosophical discourse.

## A Master Class on Mysticism

This year's guest lecture for the department's prestigious "Intensive Course," part of the International Master's Program in Jewish Philosophy, was preeminent scholar of Jewish mysticism Prof. Eliot Wolfson of the University of California, Santa Barbara. Open to both outstanding students in the program and select researchers from around the world, the course positions the department as a leading source for knowledge production and dissemination in the field.

## A Public Lecture on Jewish Philosophy

The department's third Annual M.G. Levin Annual Public Lecture in Jewish Thought hosted the renowned Talmudic scholar, philosopher, and poet Dr. Adriel Kosman of the University of Potsdam's School of Jewish Theology, who spoke about Martin Buber's reading of rabbinic literature. The previous lecturers in the series, which focuses on the theological and philosophical meanings of being Jewish in the 21st century, were the American political theorist Prof. Michael Walzer and Bar-Ilan board member and friend, the late Rabbi Lord Jonathan Sacks.



# A NEW APPROACH TO PARKINSON'S DISEASE

Using virtual reality glasses and a multi-sensory simulator, a Bar-Ilan researcher is widening our understanding of Parkinson's disease, and of how our brains perceive the world.

Characterized by tremors, rigidity, slowness of movement, and difficulty walking, Parkinson's disease is considered by many to be primarily a disorder of the motor system. But Dr. Adam Zaidel, head of a research lab at Bar-Ilan's Leslie and Susan Gonda Multidisciplinary Brain Research Center, thinks it's a bit more complicated than that.

"First of all, Parkinson's has many non-motor symptoms. Also, certain motor symptoms may actually result from perceptual dysfunction, or the brain's inability to integrate the information it gets from different sensory cues in order to act in the world," says Zaidel, who uses the phenomenon ofvection, or the sensation of movement produced by visual stimulation, to illustrate his point. Almost everyone is familiar with the illusion of self-motion that occurs when watching a moving train through the windows of a stationary one. This happens because the brain is receiving two conflicting signals: one from our visual system, and the other from our vestibular system, or sense of balance, which tells us that we're sitting still. The interplay of sensation and perception creates our experience of reality. It's precisely that interplay that Zaidel's unique, 3D multi-sensory motion simulator uses to explore perceptual deficits in Parkinson's disease.

“**THE MORE WE UNDERSTAND PARKINSON'S PATIENTS' PROCESS OF MULTI-SENSORY INTEGRATION, THE MORE EFFECTIVELY WE CAN TREAT THEIR DEBILITATING MOTOR SYMPTOMS.**”



Dr. Adam Zaidel of the Leslie and Susan Gonda Multidisciplinary Brain Research Center



Dr. Zaidel's custom, 3D multi-sensory motion simulator with virtual reality glasses for studying how the brain integrates information from multiple sources.

Like the motion chairs used by professional flight simulators, Zaidel's chair is mounted on a six degrees of freedom motion platform that can be moved in any direction, in sync with the virtual reality glasses on the subject's head. By controlling the visual and vestibular cues independently, Zaidel's team can simulate a situation in which the senses send conflicting information to the participant's brain. Then, through behavioral responses from participants, as well as by recording the electrical activity of the brain, they can study how the brain integrates information from multiple sources to make perceptual decisions. With the help of volunteers with Parkinson's from the nearby Sheba Medical Center, Zaidel's team tests how these perceptual decisions are affected by the disorder.

"What we've found is that Parkinson's patients are especially reliant on visual cues, even as their visual perception of self-motion has deteriorated. This is, to say the least, a dangerous combination," says Zaidel, who explains that sensory augmentation devices or sensory retraining can therefore be important additions to the existing array of therapies. "The more we understand how multi-sensory integration breaks down in Parkinson's," he concludes, "the more effectively we can treat the debilitating symptoms of this disease."

## MORE IN BRAIN SCIENCE AT BAR-ILAN

### Brain vs. Machine

Prof. Ido Kanter of the Department of Physics and his team at the Leslie and Susan Gonda Multidisciplinary Brain Research Center showed in a study published in April that the brain's computational capabilities can outperform state of the art intelligence algorithms. Their work in bridging experimental neuroscience and machine learning can advance artificial intelligence in areas such as robotic control and network optimization.

### Smarter Diagnostics

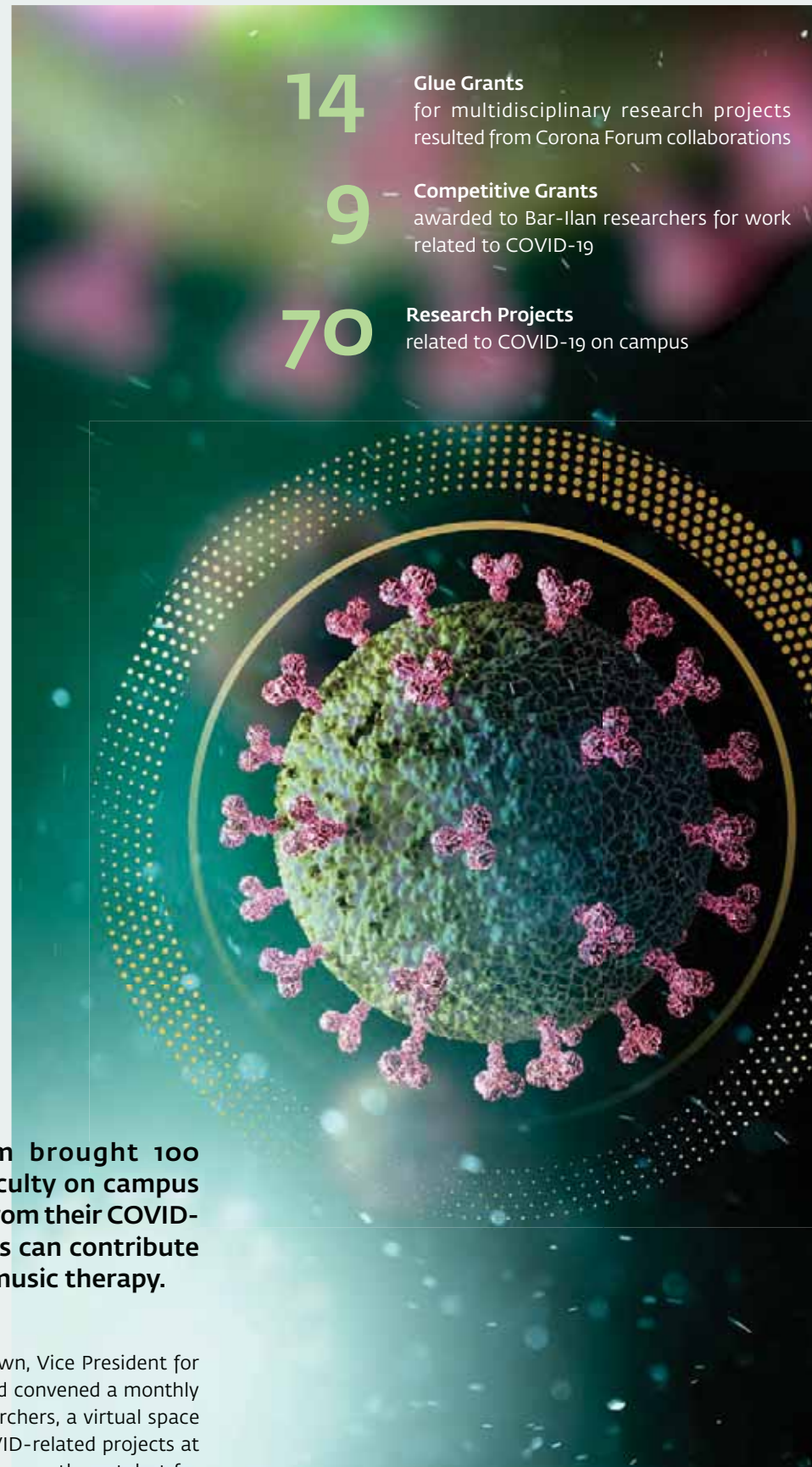
Prof. Izhar Bar-Gad and his team from the Neural Interfaces Lab at the Leslie and Susan Gonda Multidisciplinary Brain Research Center were one of four winners of The Michael J. Fox Foundation for Parkinson's Research and Sage Bionetworks DREAM Challenge, designed to identify new methods for predicting the severity of Parkinson's symptoms by means of data collected from patients during daily life. Bar-Gad and his team applied advanced signal processing methods to the data collected from smartwatch and smartphone sensors, then used machine learning models to analyze the results.



# 100 MINDS ARE BETTER THAN ONE

**Bar-Ilan's Corona Forum brought 100 researchers from every Faculty on campus together to share insights from their COVID-related work, whose results can contribute to fields from medicine to music therapy.**

Within weeks of Israel's first lockdown, Vice President for Research Prof. Shulamit Michaeli had convened a monthly "Corona Forum" for university researchers, a virtual space to keep each other updated on COVID-related projects at Bar-Ilan. The forum itself quickly became the catalyst for innovative projects, from a collaboration between Bar-Ilan chemists and biologists for the development of virus neutralizing nanoparticles, to another between the faculties of medicine and engineering for the study of neutralizing antibodies for use in a vaccine.



## The Corona Forum: Research Across Disciplines

### Instrumental Music

Dr. Ilanit Gordon of the Department of Psychology showed that music enables the level of social bonding that distinguishes humans from other species. This trait is key to maintaining a sense of hope and empathy during isolation.

### Boiling Point

Prof. Liat Kulik from the Louis & Gabi Weisfeld School of Social Work studied the connection between working from home during the COVID-19 pandemic and physical, verbal, and emotional abuse between spouses.

### Broken Heart

Prof. Amit Shrira, Prof. Ehud Bodner, and Dr. Yaakov Hoffman of the Interdisciplinary Department of Social Sciences linked COVID-19 induced loneliness in older adults to anxiety, depression, and symptoms that immediately follow exposure to trauma.

### Mother's Daughters

Prof. Liat Ayalon of the Louis & Gabi Weisfeld School of Social Work examined how women's concern for their mothers' well-being during the COVID pandemic affected their own physical and psychological state.



### Exit Strategy

Prof. Baruch Barzel, principal investigator of Bar-Ilan's Data Science Institute and a researcher at the Leslie and Susan Gonda Multidisciplinary Brain Research Center, developed a mathematical model for exiting from COVID-19 lockdowns while controlling the rate of new infections. The strategy was adopted for reopening schools in Israel, Austria, and Germany.

### Rapid Test

Dr. Amos Danielli of the Alexander Kofkin Faculty of Engineering developed a technology to test 100 saliva samples in just 15 minutes, using a combination of optics and magnetic particles. The diagnostic tool was used in the Ministry of Health's central virology lab at Sheba Medical Center.

### Tunnel Vision

Drs. Eran Avraham and Izaak Cohen of the Department of Chemistry developed the technology used in the sanitation and disinfection tunnels created by RD Pack. One tunnel, whose water-based disinfectant spray is a hundred times stronger than bleach yet safe for humans and the environment, is installed at the entrance to Tel Aviv's Bloomfield Stadium.

### Strong Dose

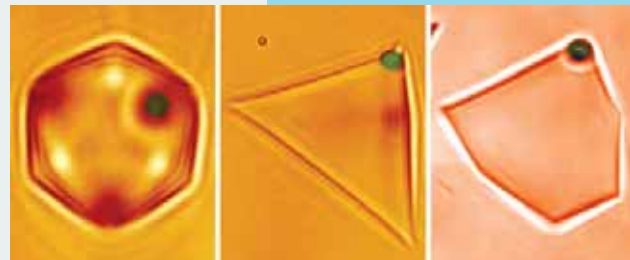
Prof. Michael Edelstein and researchers from the Azrieli Faculty of Medicine and Ziv Medical Center published a study showing that individuals previously infected with COVID-19 responded strongly to just one dose of the Pfizer vaccine, regardless of when they were infected and whether or not they had detectable antibodies against the virus prior to the shot. Their findings can help countries make informed decisions regarding vaccine policy.



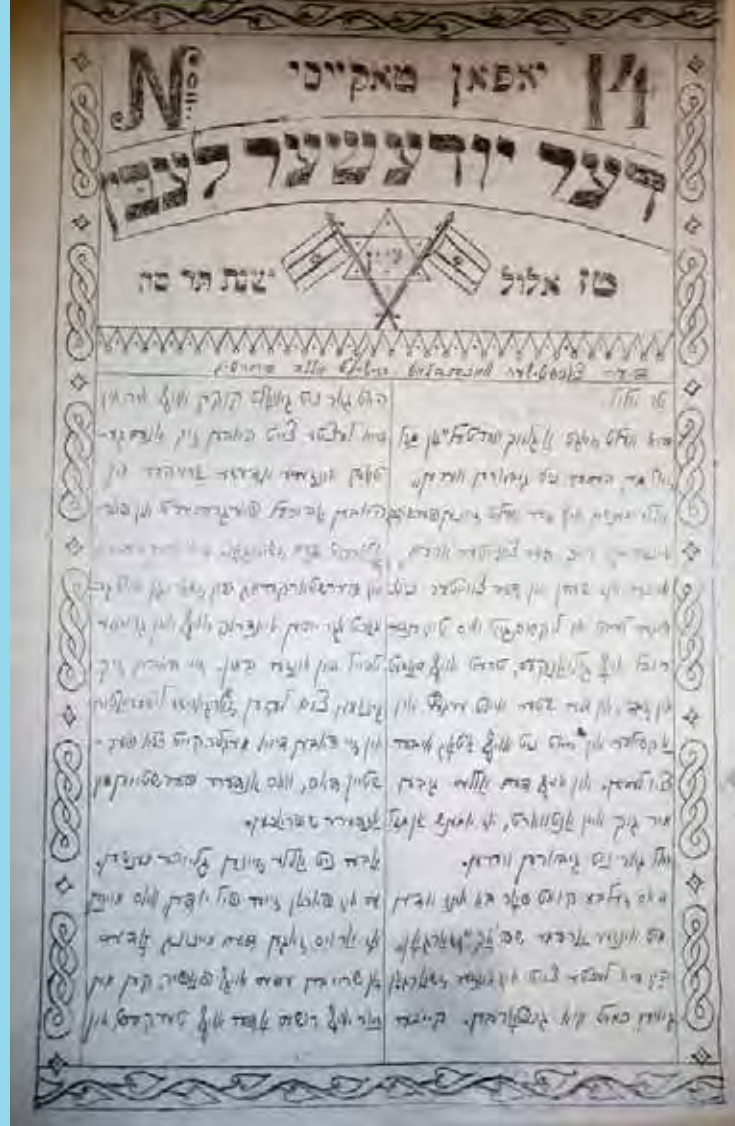
# RESEARCH IN PICTURES



Šafenat pa'neah, a Torah commentary by the fourteenth-century scholar Eleazar Ashkenazi, survived in a lone manuscript found among Jewish cultural treasures plundered by the Nazis. It was recovered from the Russian State Military Archives by the Zalman Shamir Bible Department's Prof. Eric Lawee, who described its significance in his work *Rashi's Commentary on the Torah: Canonization and Resistance in the Reception of a Jewish Classic* (Oxford: Oxford, 2019).



Prof. Eli Sloutskin and his group from the Department of Physics and the Institute of Nanotechnology and Advanced Materials discovered a mechanism by which liquid droplets spontaneously adopt particular shapes. Together with a related mechanism for making solid microparticles self-position onto these droplets' vertices, this discovery opens new self-assembly routes in nanotechnology.



The vibrant cultural life of Jewish POWs during the 1904-5 Russo-Japanese War included religious rituals, political activities, lectures, amateur Yiddish theater, and even a newspaper edited by Joseph Trumpeldor. Prof. Dov Ber Kotlerman of the Joseph and Norman Berman Department of Literature of the Jewish People published his study of the POWs' experience in English, Hebrew, and Japanese.



A silver coin from the time of the Bar-Kochba revolt, discovered this year by Prof Boaz Zissu and Dr. Dvir Raviv of the Martin (Szusz) Department of Land of Israel Studies and Archaeology. Their archaeological survey of Nahal Tekoa, a wadi in the Judean Hills, was published in the German journal *Zeitschrift des Deutschen Palästina-Vereins* and supported in part by the Jeselsohn Epigraphic Center for Jewish History.



Prof. Zehavit Gross, head of The Van-Gelder Center for Holocaust Instruction and Research of the Pinkhos Churgin School of Education organized a tour of Yad Vashem as part of her Reflective Culture of Holocaust Remembrance program. The program brings Jewish and Arab youth movements together around the study of the Holocaust to encourage solidarity and understanding between different sectors in Israeli society.

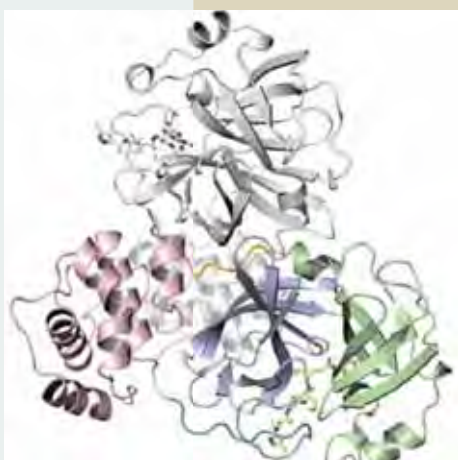


Prof. Michal Ben-Shachar and researchers from the Department of English Literature and Linguistics and the Leslie and Susan Gonda Multidisciplinary Brain Research Center identified the language pathways in the brain involved in processing Hebrew word structure (i.e., word morphology). Their research showing that ventral pathways in both the brain's hemispheres are involved was published in the journal *NeuroImage* this year.

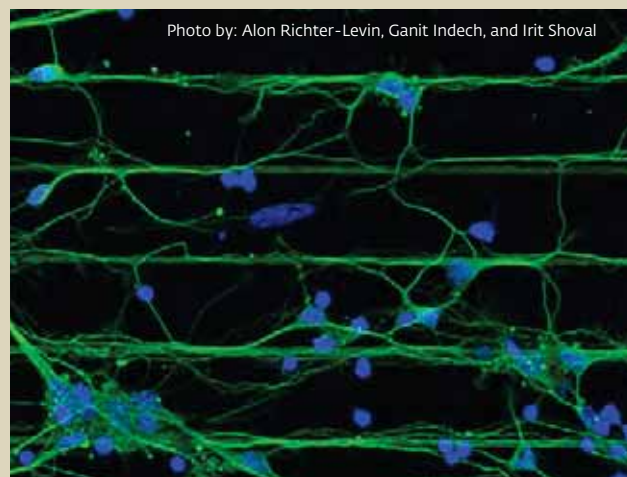




Head of the Geochemistry Lab Prof. Yishai Weinstein of the Department of Geography and the Environment is developing radioactive, isotope-based methods to determine the age of the permanently frozen lands of the Arctic Ocean's Svabard archipelago. He is also studying the results of thawing from past and current global warming.



Prof. Dan Major of the Department of Chemistry and his team developed a software program called EnzyDock for predicting the position and orientation of ligands, or small molecules, when they are bound to the protein receptors in SARS-CoV-2. Their work will help researchers design anti-viral agents for targeting coronaviruses.



Prof. Orit Shefi of the Alexander Kofkin Faculty of Engineering, and Prof. Amos Sharoni of the Physics Department and the Institute of Nanotechnologies and Advanced Materials, are developing devices that mimic the neuronal environment, enabling them to interact with—and promote the growth of—neuronal cells. Their work has important implications for brain-machine interfaces and nerve-injury repair.



3D-printing technology enables the fabrication of personalized implants and scaffolds that fit the patient's precise anatomy. Prof. Imad Abu El Naaj of the Azrieli Faculty of Medicine and the Department of Oral and Maxillofacial Surgery (OMF) at Baruch Padeh Medical Center, Poriya is studying new techniques in the use of 3D-printing for OMF surgery.



Using the hair follicle as a model system, Dr. David Enshell-Seijffers and his team from the Azrieli Faculty of Medicine study the molecular composition of biological clocks and the mechanisms by which these clocks regulate stem-cell activity. Their research was published this year in the journal Nature Communications.



Salaha, the young subject of a watercolor by the French sculptor Auguste Bartholdi—best known for designing the Statue of Liberty—was painted during his sojourn in Yemen in 1856. The cultural encounter between strangers and locals in nineteenth-century Yemen and the wider Middle East is the subject of *Strangers in Yemen* (Berlin: De Gruyter, 2020), published by Prof. David Malkiel of the Israel and Golda Koschitzky Department of Jewish History and Contemporary Jewry last year.

Dr. Amiyaal Ilany of the Mina and Everard Goodman Faculty of Life Sciences studies the social-network dynamics of wild animals including the rock hyrax. Using proximity sensors to document social relationships in high resolution, Ilany and his team test which social structures are more stable than others, and how social networks affect survival and reproductive success.





# CAMPUS



## Turning Places into Possibilities

Once upon a time, students who missed a lecture would try to catch up by borrowing a fellow classmate's notes. Today, they can simply watch the lecture online, from a digital archive on their university's learning-management platform.

That is, if they're students at Bar-Ilan.

Access to a video archive with thousands of filmed courses, an online exams system, and an AI platform for improving online-course discussions are just some of the ways that Bar-Ilan has transformed itself over the last three years into a hybrid university. "Hybrid" because our physical campus still plays a vital role in education, research, and community outreach, even as technology has enhanced all these activities and made them more adaptive and accessible.

For instance, by introducing strategic automation into our student services, we've made the process of enrolling in courses or accessing the library far quicker and more efficient, while at the same time freeing up staff for more meaningful work. Our new website makes identifying and registering for the right degree a seamless experience, and our online departmental open houses were so successful, we plan to hold them in future years. Finally, our International School's new online platform for student support, our digital library catalogue, and our online public lecture series and popular podcast, Bar-Da'at, opens avenues to knowledge once closed to those who live too far from Ramat Gan.

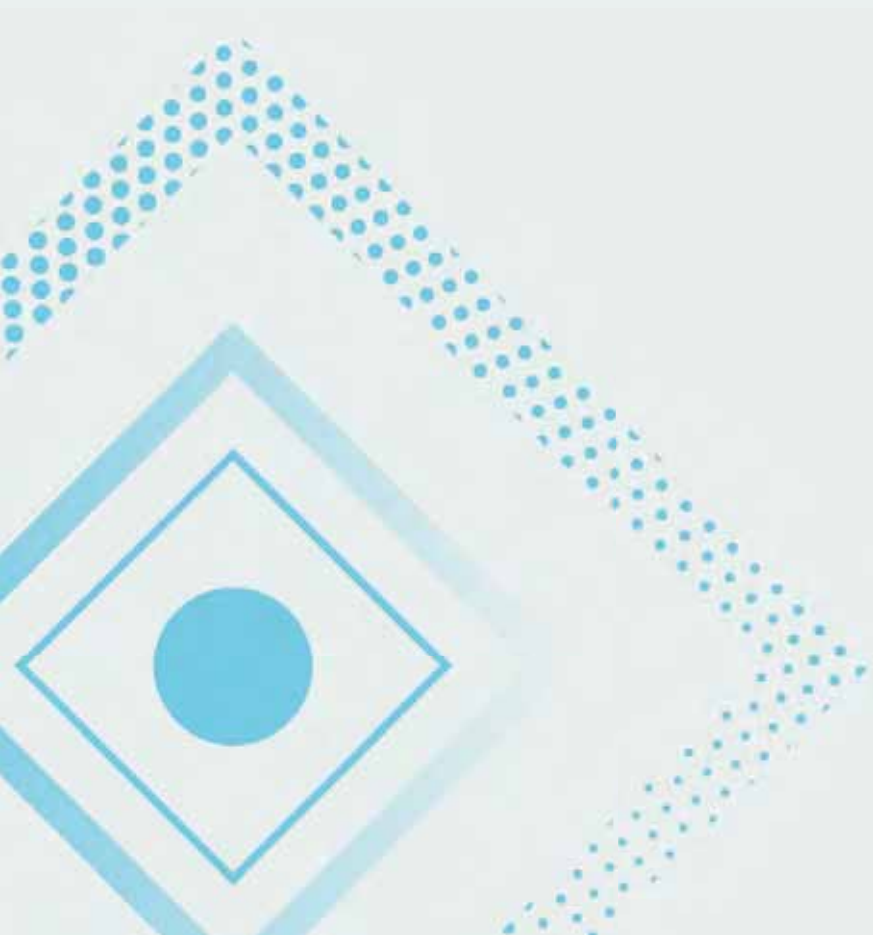
Alongside our digital transformation, new capital projects also ensure that we're ready for the challenges ahead. Our new computer science building, for example, will enable us to expand the size of our faculty and student body in such fields as robotics, AI, and natural language processing—fields that

are not merely cutting-edge, but also critical to the security and prosperity of our state. The construction of a new teaching building at the Azrieli Faculty of Medicine will also allow us to increase the number of students we can accept for a medical degree, as well as to bring more talented, idealistic individuals to the country's northern periphery. And the completion of our new student dormitories this year means that we can accommodate more international students and our growing student body.

Finally, and fittingly, two new university light rail stations on campus will welcome hundreds of thousands of visitors from the larger Tel Aviv region to campus each year. Both literally and metaphorically, Bar-Ilan is now on the map—and extending its impact across it, too.



**Zohar Yinon**  
CEO





# A MEDICAL SCHOOL ON A MISSION

Founded in 2011 to change the health landscape of the Galilee, the Azrieli Faculty of Medicine has established itself in just its first decade as a national leader in clinical research and Israeli medical education, with an emphasis on population health and reducing health inequity. It has also created a network of local partners for the promotion of sustainable models of preventative healthcare. But perhaps most important, a steadily increasing number of the Faculty's nearly 600 graduates are choosing to stay and practice medicine in the North, ensuring not only a healthier region, but a stronger social and economic fabric, too.





# Heroes of the Hour

Educators, researchers, leaders, and partners who helped the Faculty rise to the challenge of combatting COVID-19.



**Dr. Daniel Glickman**  
Vice Dean, Pre-Clinical Studies

Specialist in pediatric infectious diseases at the Baruch Padeh (Poriya) Medical Center, Glickman oversaw the Azrieli Faculty of Medicine's compliance with COVID-19 regulations during the pandemic, while ensuring that its teaching and research activities continued unabated throughout.



**Dr. Sivan Spitzer-Shohat**  
Principal Investigator, the Health Equity Advancement Lab

Head of population health education at the Faculty, Spitzer-Shohat founded, together with her mentor and emeritus professor at the Faculty Dr. Mary Rudolf, the innovative ETGAR program for training medical students to increase disadvantaged patients' health literacy. Along with Dr. Lilach Malatskey, vice dean of community medical education, Spitzer-Shohat directed the Russell Berrie Foundation project to create a medical faculty community platform for addressing the adverse effects of COVID-19 on northern communities.



**Dr. Michael Edelstein**  
Professor of Public Health and Epidemiology

One of the world's leading epidemiologists, Edelstein moved to Israel in August from England, where he was responsible for public health programs at Public Health England, the executive agency for the London based Department of Health. At the Faculty, he plans to focus on the equitable delivery of public health services and on harnessing data to improve public health, especially with regard to vaccines.



**Dr. Milana Frenkel-Morgenstern**  
Head of the Cancer Genomics and Biocomputing of Complex Diseases Lab

Together with the Rabin Medical Center's Neuro Oncology Department, Frenkel-Morgenstern deep sequences blood and tumor samples and analyzes the data for unique mutations, part of her efforts to track the molecular evolution dynamics of brain tumors and reveal potential drug targets. This year, Oxford University Press published Frenkel-Morgenstern's study demonstrating that the analysis of past research results and the mining of available data can provide novel directions for the successful application of currently approved treatments to COVID-19.



**Noam David Reshelbach**  
Associate Dean for Administration

Having served on the staff of the Azrieli Faculty of Medicine since its inception, first as manager of security and operations and today as associate dean for administration, Reshelbach, who "knows everything about everything," according to Dean Karl Skorecki, oversaw the day to day functioning of the medical school during the most difficult days of COVID-19.



**Dr. Salman Zarka, Director General of Ziv Medical Center**



**Prof. Masad Barhoum, Director of the Western Galilee Medical Center**



**Dr. Erez Onn, Director General of the Baruch Padeh Medical Center, Poriya**



**Dr. Ibrahim Harbaji, Medical Director of Holy Family Hospital, Nazareth**



**Dr. Fahed Hakim, Medical Director of the Nazareth Hospital EMMS**



**Dr. Nael Elias, Director of Saint Vincent De Paul-French Hospital, Nazareth**

The directors of the North's six medical centers, together with community HMO providers in the region, partnered with the Azrieli Faculty of Medicine to create a unified front against COVID-19, combining clinical care, public health information, and research.





## Research for the Public Good

**Highlights from the more than 35 groups carrying out cutting edge basic and translational research in the biomedical and health sciences at the Azrieli Faculty of Medicine.**

### **A New Paradigm for the Treatment and Care of Diabetes**

Developed through the combined efforts of the Azrieli Faculty of Medicine, faculty affiliated HMOs and hospitals, municipal leaders, and community organizations, SPHERE: The Russell Berrie Center for Diabetes in the Galilee aims to identify the specific obstacles to diabetes prevention and care among the Galilee's communities. The Center also seeks to leverage the area's existing capabilities and implement integrated solutions in a range of fields. Finally, the Azrieli Faculty of Medicine carries out both basic and clinical biomedical research in the areas of genetics, microbiome, and islet cell biology, which together hold the potential to elucidate the genetic basis of diabetes, determine the possibility of diabetes reversal, and test the benefits of new therapies.



Prof. Karl Skorecki, Dean, Azrieli Faculty of Medicine

### **A COVID-19 Clinical Trial for Mitigating Lung Injury**

A research team led by Prof. Karl Skorecki, dean of the Azrieli Faculty of Medicine, obtained approval from the Ministry of Health to test the efficacy of a small, naturally occurring peptide in a clinical trial for COVID-19. The trial, partially supported by Jay L. Schottenstein, sought to determine whether the peptide, which protects the integrity of lung cells and maintains adequate blood flow to vital organs, could decrease the need for artificial respiration and mitigate lung injury.



Dr. Hava Gil-Henn

### **An Inhibitor for Breast Cancer Metastasis**

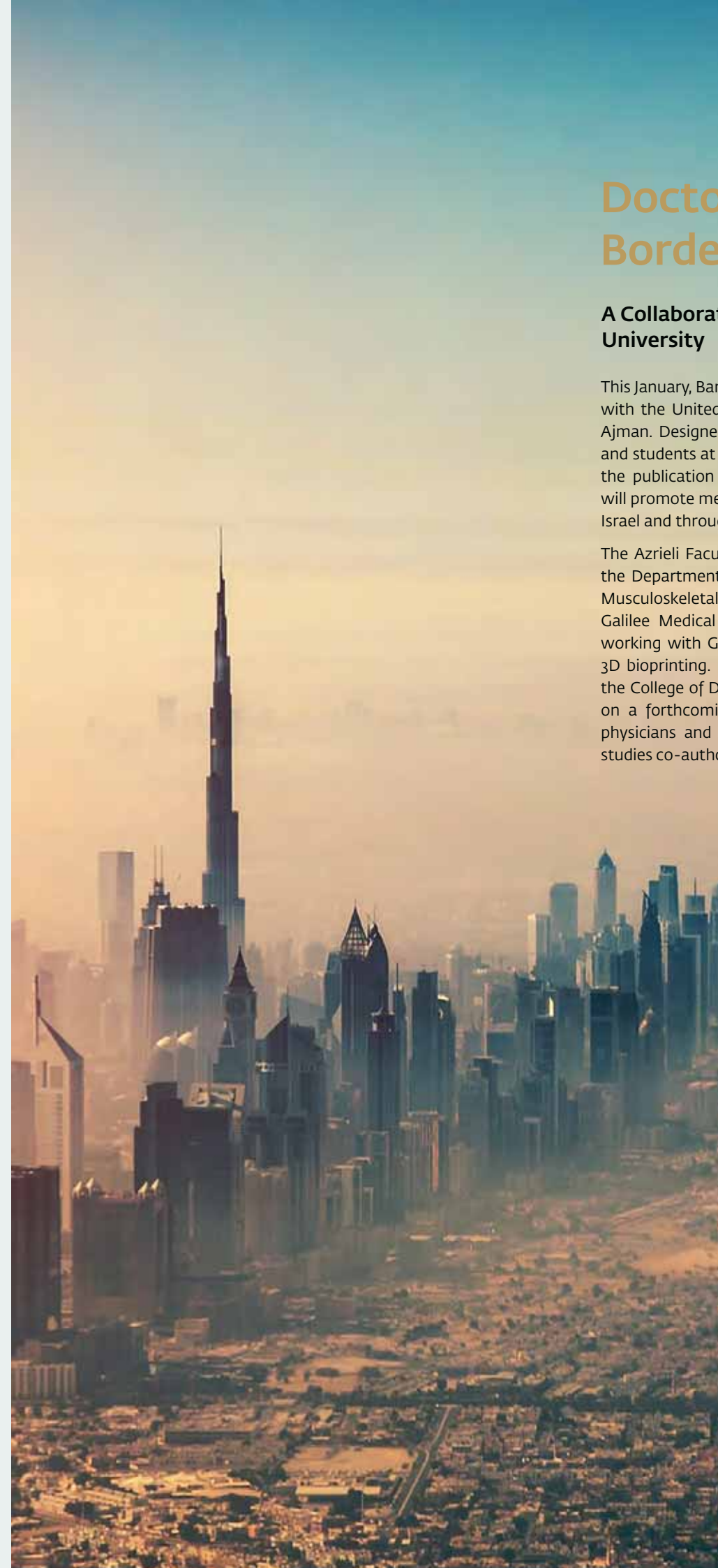
Principal Investigator of the Cell Migration and Invasion Lab Dr. Hava Gil-Henn received a three-year grant from the Israel Cancer Research Fund for a project to explore the molecular, cellular, and whole organ aspects of breast cancer metastasis, or secondary malignant growths found far from the cancer's primary site. Gil-Henn hopes to find a metastasis inhibitor and develop better metastasis prediction tools.

## Doctors Without Borders

### **A Collaboration with the UAE's Gulf Medical University**

This January, Bar-Ilan signed an agreement for collaboration with the United Arab Emirates' Gulf Medical University in Ajman. Designed to facilitate the exchange of researchers and students at the graduate and undergraduate levels and the publication of joint academic studies, the agreement will promote medical research for improved public health in Israel and throughout the Middle East.

The Azrieli Faculty of Medicine's Dr. Samer Srouji, chair of the Department of Oral and Maxillofacial Surgery and the Musculoskeletal Bioengineering Laboratory in the Western Galilee Medical Center, will initiate the collaboration by working with GMU researchers on tissue engineering and 3D bioprinting. He and Prof. Hesham Fathi Marei, dean of the College of Dentistry at GMU, have already collaborated on a forthcoming study on the effects of COVID-19 on physicians and dentists, heralding a new era of medical studies co-authored by researchers from Israel and the UAE.





## Changing the Face of the North

While rural regions traditionally struggle to provide residents with healthcare, the Azrieli Faculty of Medicine is attracting and training top physicians to practice in the periphery.



Lihi Shalev-Tal, third year medicine student.

### Tzafon Yarak ("Green North")

Tzafon Yarak, an initiative of the Office of the Dean and course coordinator Dr. Anat Einy, aims to offer a small cohort of students from each class who are committed both to the field of family medicine and to practicing for at least four years in the North a full scholarship for tuition and living expenses, as well as added exposure to the region and support from a range of stakeholders in the community. For example, participating students will take special courses on the social determinants of health in underserved populations and complete pre-clinical coursework in the humanities, as well as complete an immersive, community focused clerkship for the continuum of family care. Finally, the initiative will take a proactive approach to integrating students into the region: Whether a job for a spouse or help with a child's special needs, the initiative's partners will provide whatever it takes to help top-notch students become both the North's future residents and providers of primary care.

### Northern Stars

Northern Stars, a collaboration of the Office of the Dean, Dr. Ofer Amir, associate dean of specialization and continuing education, and Dr. Erez Onn, director general of the Baruch Padeh Medical Center, Poriya, seeks to attract an annual cohort of six exceptional young doctors—all of whom

have offers from large, highly regarded medical centers—to one of the six Faculty-affiliated hospitals in the region. By offering close mentoring and guidance by the region's leading physicians, as well as basic research opportunities in cutting edge fields such as genetics, microbiome, and islet cell biology, the program provides participants with opportunities for professional growth and advancement that are usually unavailable so early in one's career. In addition, the program offers participants the option of doing the second year of the two year research fellowship abroad, in the hope that they will both serve as ambassadors for the Galilee and then bring both their knowledge and experience home for the benefit of the northern community.

The program received initial support from the Azrieli Faculty of Medicine, the Galilee Development Authority, and Israel's National Lottery, which provided scholarships for each student's residency and fellowship for the program's first year. Northern Stars currently seeks partners for the coming years.

## Transformative Education

Beyond dedicated teachers and novel teaching technologies, the Azrieli Faculty offers its students critical perspective on the meaning and responsibilities inherent in their chosen field.



### The Azrieli Doctor's Doctor: Dr. Michael Weingarten z"l

The Azrieli Faculty of Medicine's unique emphasis on population health and community outreach is thanks in large part to its founding dean of medical education, Dr. Michael Weingarten z"l. Renowned for raising the profile of family medicine in Israel, for his dedicated work with the Yemenite community in the town of Rosh Haayin, and for his legendary humility, the Oxford-trained Weingarten was a mentor to many among the Faculty's leadership. His approach to the practice of medicine lives on in the mission of the faculty and will shape its students' education for decades to come.

### An Innovative Introduction to Clinical Medicine

To make sure that students connect patients and communities to the practice of medicine, the course "Introduction to Clinical Medicine," overseen by Associate Dean for Medical Education Dr. Eric Shinwell, begins in the very first year of studies at the Azrieli Faculty of Medicine. Through the extensive use of an in-house, faculty run simulation lab, replete with actors and a repertoire of scenarios commonly faced by physicians in the field, the weekly course teaches students how to take medical histories, ask the right questions, and explain situations to patients in clear and compassionate ways.

### Medical Ethics

While a course on medical ethics is commonplace in medical degrees, the Azrieli Faculty of Medicine has taken it one step further, designing an additional monthly clinical mentoring program for the discussion of real ethical issues that come up during a student's rounds. The course also uses innovative means to teach the sociology and psychology of medicine, such as the "art and medicine" component, which encourages conversation about students' interpretations of an artwork that presents a medical subject.



# FEMALE ROLE MODELS

## How Bar-Ilan is advancing the place of women—under the law, in the beit midrash, and in all areas they want to succeed.

Whether through research and activism on behalf of women's rights or strengthening the world of women's Torah scholarship, Bar-Ilan female leaders demonstrate that a woman's commitment to Jewish law, texts, and community can coexist with self-empowerment and improve society.

**Rabbanit Devorah Evron, campus spiritual advisor:** "My position is anything but symbolic."

One of the very first women to study in Bar-Ilan's Midrasha, Evron directs the Ohr Torah Stone's Susi Bradfield Women's Institute of Halakhic Leadership at Midreshet Lindenbaum, which offers women the chance to learn Jewish law on a level commensurate with the top circle of Torah scholars in Israel and around the world. She is the former head of Nigun Nashim, a program that offers pluralistic Jewish study to women of all religious backgrounds, and is an active member of Kolech and Beit Hillel, two of the most prominent Orthodox feminist organizations in Israel today. At Bar-Ilan, she seeks to be an address for all students and faculty who seek information or inspiration, and to bring a feminist Torah voice into dialogue with diverse points of view. "My position may be a symbol of positive change in Israel, but it's anything but symbolic," says Evron. "I plan to work with departments, schools, and all interested students to show how a feminist Torah perspective can enrich education, society, and individual lives in real ways."



Rabbanit Devorah Evron



Dr. Lea Wiesel

**Dr. Lea Wiesel, director of the Midrasha:** "It is possible to be deeply engaged in Torah study and to pursue any intellectual passion at the same time."

Wiesel, whose master's thesis argued for a definition of sexual harassment as a criminal offense, has always been ahead of her time: In her day, religious women rarely studied law, let alone pursued a PhD. Yet having discovered a love of Torah learning at Bar-Ilan's Midrasha while earning her law degree, Wiesel, who taught law and founded a beit midrash at Sheari Mishpat College, wants to show today's young women—religious and secular alike—that "it is possible to be deeply engaged in Torah study and to pursue any intellectual passion at the same time." She also wants to correct the view that Torah study cannot, or even should not, contribute to a discourse about pressing social issues of the day. "The very opposite is true," says Wiesel. "It's not only the case that the Torah can speak to these issues, but also that the religious world has an obligation to address them." Herself a member of Forum Takanah, a group of Torah scholars, law professionals, and educators working to prevent sexual abuse in the religious community, Wiesel plans to establish a beit midrash hevrati, or socially minded course of study, in the Midrasha.

**Prof. Ruth Halperin-Kaddari, founding director of the Rackman Center for the Advancement of the Status of Women:** "A conversation between Israeli law, Jewish law, and feminism could only take place on a campus like Bar-Ilan."

One of Israel's leading legal scholars and advocates for gender equality, Halperin-Kaddari is also known internationally for her work on feminist legal theory and women's rights. A former member of the United Nations Committee on the Elimination of Discrimination against Women, she is the founding academic director of the Ruth and Emanuel Rackman Center at Bar-Ilan. The Center works at the intersection of Israeli law, Jewish law, research, and advocacy to advance the status of women in family law and promote legal and social change for all women in Israeli society. One of the first recipients of the U.S. Secretary of State's International Women of Courage Award for her work on international women's rights, Halperin-Kaddari was ranked as one of the world's 100 most influential people in gender equality policy in 2018. "A conversation between Israeli law and Jewish law could only take place on a campus like Bar-Ilan," she says. "An environment that is a priori opposed to religious tradition is not one in which a discussion about how to address problematic aspects of that tradition can take place. At Bar-Ilan, the combination of respect for religious values and for the rights of women is what will lead to progress in precisely those areas that need it most."



Prof. Ruth Halperin-Kaddari

Photo by Rami Zarengar



# THE CHANGING FACE OF BAR-ILAN

## New buildings and infrastructure projects from the past year.

### Bringing the City to Campus

This year, foundation work began on two light railway stations slated for inclusion in the Tel Aviv Light Rail's 29 kilometer Purple Line. Connecting Tel Aviv's eastern suburbs with Sheba Medical Center in the city's center, the Purple Line, slated for completion in 2026, is forecast to carry more than 60 million passengers a year and expand the region's access to Bar-Ilan's campus substantially.

**Interesting Fact:** The Dahan Campus Station will be the site of a new architectural icon: the Dahan Gate, a massive overhang inspired by the Star of David under which all vehicles and pedestrians must pass.

### Building a National Resource

Bar-Ilan broke ground at the site of the new Alexander Grass Computer Science Building in the summer, literally laying the foundations of a research powerhouse for some of Israel's most complex challenges. The state of the art building will

include laboratories and offices for the department's faculty, an auditorium, and a patio, and features spaces designed to enable and encourage collaboration between scientists.

**Interesting Fact:** The capstone dedication included the burial of a time capsule to be opened by the department's faculty and students in a half century. The capsule includes messages from the project's partners explaining why they chose to support the building and what they hope the department will achieve.

### Teaching Tomorrow's Doctors

In the fall, construction began on the three year expansion of the Azrieli Faculty of Medicine, established in 2011 to change the healthcare landscape of the Galilee. The new building, made possible by a major gift from the Edmond de Rothschild Foundation and major gifts from the Azrieli and Dahan families, will be used for teaching, and will double the number of students who can pursue a medical degree.

**Interesting Fact:** The entrance to the new building will include a dedicated space in memory of the late Benjamin de Rothschild, the renowned philanthropist for Israel and supporter of diversity in Israeli academia.



The Alexander Grass Computer Science Building



Student dormitories

### Creating Student Communities

The first of the 1,720 occupants of Bar-Ilan's new student dormitories took up residence in October. Based on the co-living concept, the dormitories aim to create a community through shared spaces, including a synagogue, two classrooms, a connecting park, and a ground floor commercial center with restaurants, cafes, bars, and shops.

**Interesting Fact:** The student village includes a plaza with an outdoor stage for performances.

### Producing Clean Energy

In keeping with its commitment to sustainability and as befits its role as the leading national university in the field of energy, Bar-Ilan inaugurated its Renewable Roofs Project by installing solar panels on six different campus structures. The energy they produce is estimated to provide nearly 700,000 NIS in savings each year.

**Interesting Fact:** The project also serves as a beta site for a portable robotic system for cleaning and monitoring solar panels developed by Prof. Gal Kaminka, head of the Department of Computer Science at Bar-Ilan.





# THE CORONAVIRUS CZAR

**How Prof. Cyrille Cohen expanded the public's knowledge of COVID-19—and of Bar-Ilan—dramatically.**

It wouldn't be quite right to say that before the pandemic, Prof. Cyrille Cohen, vice dean of the Mina and Everard Goodman Faculty of Life Sciences and one of Israel's leading sources for information on COVID-19, led a quiet life. As head of the Laboratory for Tumor Immunology and Immunotherapy, Cohen studies the human immune system's ability to generate long lasting, highly functional T-cells, a key to gene transfer approaches to cancer therapy. Yet when a short interview he gave for The Jerusalem Post in the early days of COVID-19 was picked up by i24NEWS, an Israel-based international television channel, it's fair to say that Cohen's life got much busier—almost 600 times busier, to be exact.

Since that first media appearance in March, Cohen has appeared in the Israeli and international press more than 600 times, effectively becoming one of Israel's leading

go-to analysts and commentators for all things COVID-19 related. In the process, he also introduced much of the world to Bar-Ilan and its researchers' expertise. Cohen has been interviewed or quoted by such major media outlets as The Atlantic Monthly, NPR, and BuzzFeed, Germany's Der Spiegel, and every major television station in his native France, and was consulted on subjects from how to blow the shofar safely on Rosh Hashana to the complex reasons for Israel's high rates of COVID-19 morbidity. When, in July 2020, he was appointed to the Ministry of Health's Advisory Committee on Trials for COVID-19 Vaccines, Cohen became still more sought after, sometimes granting up to three interviews in a single night. "It was a privilege to be able to represent both Bar-Ilan and Israel on the world stage during such a critical moment in history," says Cohen. "It was also exhausting, but exhilarating in equal measure."



Prof. Cyrille Cohen

# ACCESS TO ACADEMIA

**How Bar-Ilan students are opening the University's doors to individuals with disabilities, and opening their minds to new possibilities.**

As a high school volunteer for Kav Lachayim ("Life Line"), Michal Fuchs-Salomon was used to interacting with individuals with disabilities in daily life. So when she began her studies at Bar-Ilan's Faculty of Law three years ago, the scarcity of this population from campus was a noticeable, and nagging, thing. "The social and educational frameworks for this population end at age 21, and the experience I was having at Bar-Ilan—learning, meeting new people, and growing both personally and professionally—simply wasn't accessible to them," Michal explains. But thanks to the support of the Faculty of Law's vice dean Prof. Yaakov Habba, that was about to change.

"Academyahad," a program whose name—a combination, in Hebrew, of "Academia" and "Together"—speaks to its overarching vision, offers young adults who have the intellectual capacity to learn at a university level but do not meet the requirements for university admission the chance to experience academic studies and campus life. A team of Bar-Ilan law student volunteers, working together with lecturers in the Faculty of Law, adapted course syllabi that they themselves would teach. Bar-Ilan's Office of Accessibility arranged for transportation and learning spaces that could accommodate individuals with special needs. And with Kav Lachayim happy to recommend a cohort of participants, the first year of studies was officially underway.

Within just a year, Academyahad has grown from a few hours for educational enrichment each week into a full-fledged program of study, providing those who complete it with a certificate from Bar-Ilan. In some cases, participants are even granted the option of applying for a regular degree. The program also plans to introduce courses whose goal is the cultivation of professional skills—the result of interest on the part of various companies in hiring Academyahad graduates. One successful startup even "adopted" Academyahad, offering tours to students to introduce them to jobs in hi-tech.

Today, the program has expanded to include other departments on campus, as well. Impressed by its impact, the Weil Family Foundation granted Academyahad funding to build up its capacities, and in 2019, the program was awarded the community service award by Israel's National Lottery and a certificate of appreciation by Israel's Knesset.

As for her initial sense that individuals with disabilities weren't a part of the university landscape, Michal is pleased to have been part of that change. "Today the campus is home to a community that never imagined it had a place here. I hope," she concludes, "it's only the beginning of what these students imagine for themselves."



Academyahad offers students with disabilities the chance to experience academic and campus life, and the skills and encouragement to succeed.



# LEARNING IN A DIGITAL WORLD

When COVID-19 closed the doors to campus, Bar-Ilan opened windows onto new ways of learning and creating community.

Data driven decisions, predictive analytics, and repeated process automation: If you're not familiar with the terms, Bar-Ilan's CEO Zohar Yinon says not to worry. "At the end of the day, the meaning is the same: Bar-Ilan is becoming a smarter and more effective institution. And as a result, it's improving its performance in every area of activity." Take, for example, Bar-Ilan's video lecture archive and online library catalogue. By filming courses, scanning books, and adapting course syllabi to online resources, the University ensures that every student and lecturer can access the material he or she needs, anywhere, at any time.

"In the early days of the pandemic," says Chief Marketing Officer Naama Gat, "it was clear that we could either try to ride out the challenge until things got back to normal, or we could accept that there's a new normal and embrace the opportunities it provides," she says. "We decided to go where the future is headed, and we haven't looked back since." Gat and Yinon are now at work on a fully searchable

database for all Bar-Ilan research, making information on past and current projects available to other academics, the media, and even the public at large. "If in the past, academic excellence required exclusivity, today Bar-Ilan is showing that an emphasis on access can make for stronger, more creative, and ultimately more influential universities."

Of course, access refers just to those services that we see. The real magic, insists Yinon, happens behind the scenes, in the places, for example, where numbers get crunched. "By collecting and analyzing data, we're building early detection capabilities that can help academic departments reach out to students at high risk of dropping out before it's too late," Yinon explains. "And by analyzing the data on each marketing campaign, we can spend less to achieve better recruitment and PR results." Then there's the matter of forms. "We're analyzing the work processes behind nearly 1,000 university forms to determine what we can cut and how we can streamline to make things more user friendly. This will also allow our employees to focus on more meaningful tasks. Multiply each form by 20,000 students and you'll get a small sense of the huge potential inherent in these technological solutions."

To emphasize his point, Yinon quotes a figure from a very different and admittedly low tech field. "Vincent Van Gogh said, 'Great things are not done by impulse, but by a series of small things brought together.' By optimizing all the small things, we're transforming the entire University," he says. Then smiles: "One form at a time."



## Bar-Ilan's Digital Reach

### Come into My Office

Two hours a day, five days a week, each department's digital doors were open via Zoom to all students who sought help with online learning, information on COVID-19 regulations, and a sense of departmental solidarity. In light of the sheer number of visitors, Bar-Ilan is set to make the program a mainstay of the post-COVID-19 academic experience, too.

### Website 2.0

Bar-Ilan's new website makes identifying and registering for the right study program a quick and seamless experience, no small feat for a site that brings all faculty, department, and administrative sites into a single orbit. With hundreds of new and archived stories about university scholarship and research, the new website sends a clear message about Bar-Ilan's strengths in scientific innovation, commitment to Jewish identity, and impact on the Jewish state and world.

### Our House in Their House

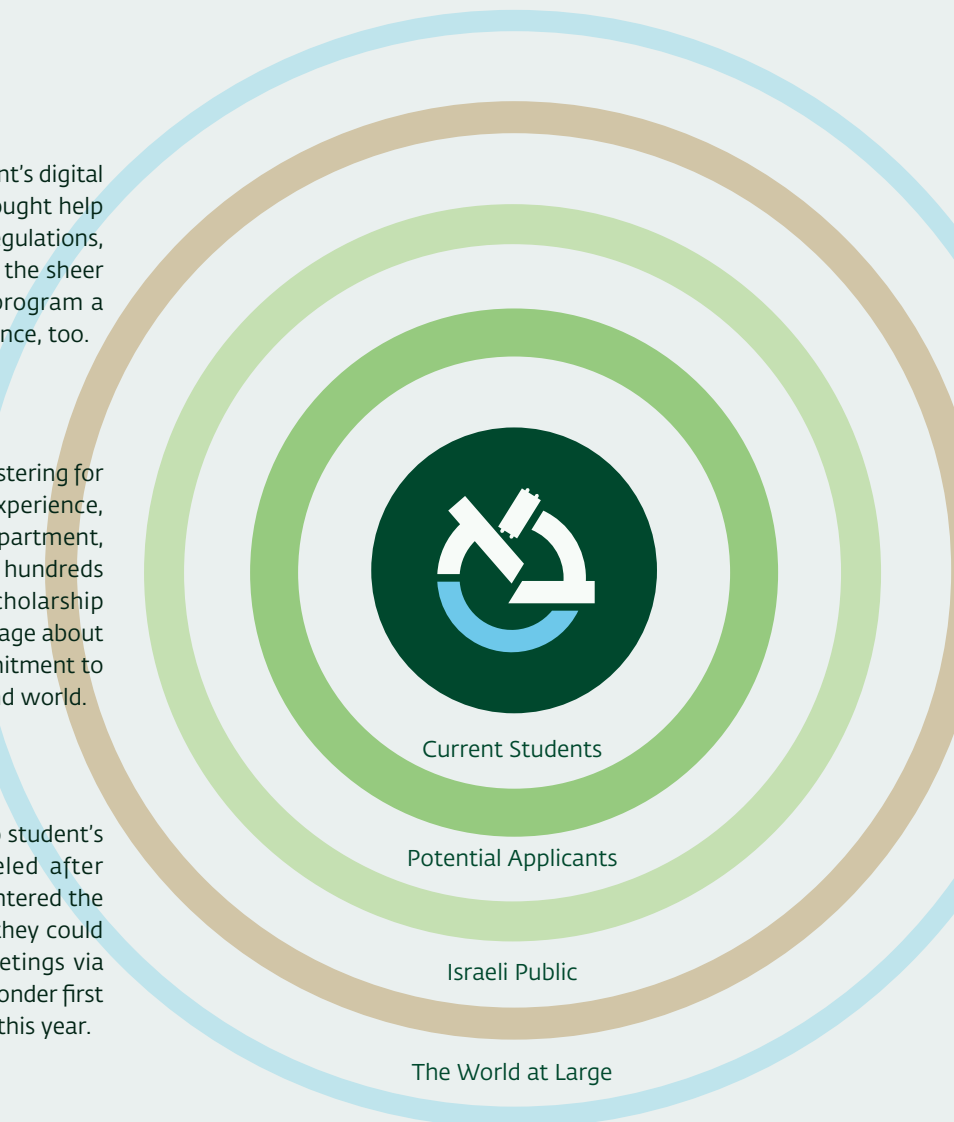
This year, Bar-Ilan's open houses came straight to student's house, courtesy of a new digital arena modeled after recruitment fairs. In place of booths, applicants entered the departments that interested them most, where they could watch an informative video and sign up for meetings via Zoom. With more than 13,000 registrants, it's no wonder first year student enrollment grew by more than 30% this year.

### Afternoon Pick Me Up

Once a day in the afternoon in the early days of the pandemic, Bar-Ilan offered free lectures by Zoom from university scholars and researchers to the Israeli public under lockdown.

### You Can Take It with You

Bar-Da'at, the University's new podcast app, features talks and lectures by faculty members in both Hebrew and English, bringing the University's intellectual capital to people around the world. With more than 250 tapings in ten different content categories, including Law and Order, Science and Judaism, Mind and Body, and Society and Economy, there's an episode for every intellectual interest and opportunities to develop a few more.



90,000+

downloads of Bar-Ilan's  
podcast, Bar-Da'at

84,000+

visitors to a Bar-Ilan  
open house

40,000+

visitors to Bar-Ilan's  
"open door" program

78,000+

unique visitors per  
month to Bar-Ilan's new  
website



# GLOB AL ISM



There are many reasons why we decided, this past year, to establish the Jean Monnet Center of Excellence on Digital Governance at Bar-Ilan. For starters, a partnership of Bar-Ilan's Faculty of Law and the University of Leeds in the UK and the Erasmus School of Law at the University of Rotterdam in the Netherlands allows us to collaborate with international researchers at the forefront of their fields. The Center will also allow us to advance Bar-Ilan's international standing and raise the international profile of our top-notch law faculty. But perhaps most important, by researching the rules and norms needed to enable big data and AI to support individual and societal interests, DIGOV will allow Bar-Ilan to make a meaningful contribution to Israel's and the world's discourse about ethics, privacy, and national security.

DIGOV is just one of the ways that Bar-Ilan is taking a more international approach to its research. Other examples include the newly founded EU-funded strategic partnership "TEAM: Teacher Education About Multilingualism," through which Bar-Ilan and seven different European universities will help countries' education systems make informed policy decisions based on scientific findings. And thanks to our newly expanded Erasmus+ Mobility partnership—for which both the funding and the number of agreements increased this year—we can now exchange faculty and research students with 69 universities in 26 countries, bringing Bar-Ilan to nearly every country in Europe.

In the area of education, we generated a joint study program for a double masters—a rarity in Israel—in the growing field of chem-informatics together with the University of Strasbourg in France. Supported by a 360,000 Euro grant from the EU, the program will prepare graduate students to pursue advanced research in the collection, retrieval, and analysis of information in order to address problems in materials science and chemistry. Moreover, our iPen Erasmus capacity program, tasked with

developing a curriculum in nano-photonics, generated innovative material for remote learning this year together with our partners at the University of Twente in the Netherlands, the Polytechnic University of Milan, and Germany's University of Erlangen-Nuremberg.

Finally, to encourage more international students to come to Bar-Ilan, we opened several new English-language MSc programs this year, including such subjects as Bible studies, Jewish philosophy, and Land of Israel studies and archaeology. We are especially proud to make Bar-Ilan a home for researchers from every country who wish to study the Jewish Bible and Jewish history at the highest level, and in this way to offer something truly unique to the world.



**Prof. Moshe Lewenstein**  
Deputy President



# INTERNATIONAL STUDENTS

An airlift from India and truckloads of chametz: For Bar-Ilan's International School, ensuring an effective and enjoyable experience for overseas students during the COVID-19 pandemic meant equal amounts determination and creativity.



Ofer Dahan, executive director of Bar-Ilan's International School, knew that right after a 16 hour flight, not all new arrivals to campus would be up for a friendly check in. But especially this year, he insists, it was critical to give Bar-Ilan's nearly 500 brave and adventurous overseas students as immediate and personal a welcome as possible, and to let them know they weren't alone during their quarantine.

"Meeting the needs of students in bidud ("isolation") was definitely a challenge," says Dahan, who oversaw the team that provided food, laundry services, and the all-important Israeli SIM card to get them through their first few week in the country. Then there was the challenge of simply getting them into the country, which, in the case of nearly 100 doctoral and post-doctoral students from India, meant arranging for a special flight. "Many of these students were meant to work in labs whose research would directly impact Israel's battle against COVID-19," says Dahan, who organized the airlift on behalf of all Israeli universities. "But whether they came to support Israeli research or, as in the case of new olim, to begin their journey as Israeli citizens, we were

determined to make their time at Bar-Ilan as meaningful as it could be."

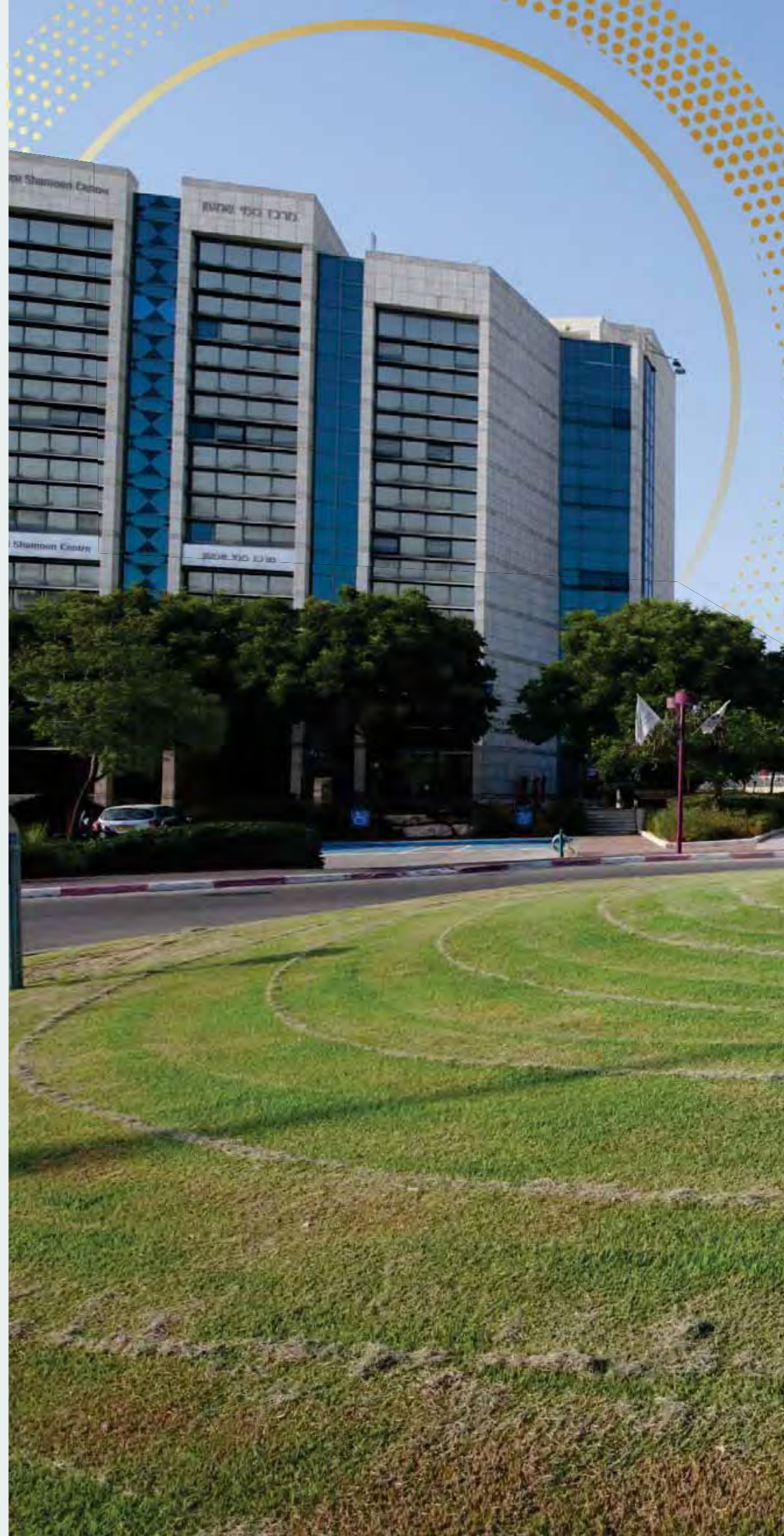
For a start, that meant creating an online ecosystem for student services and support. Via the school's website, students could book personal Zooms for help with everything from remote learning to navigating Israeli bureaucracy, while an international student WhatsApp group enabled them to communicate informally about whatever they were going through. "Within just a few months, we didn't need to step in with information," recalls deputy president Prof. Moshe Lewenstein, who supervises the International School's activities. "The students were answering each other's questions on their own."

Finally, a weekly calendar of online events, including lectures on a range of topics from Bar-Ilan's faculty, ensured that overseas students kept up a constant connection to campus, while both virtual and physical celebrations of international holidays helped students unable to fly back for Thanksgiving or Diwali feel a sense of connection to home. "Thanksgiving was definitely the most delicious of the holidays we

celebrated," smiles Dahan, "but Pesach was the most fun: The International School organized a massive delivery of baked goods and snacks to non-Jewish international students before the holiday to make sure their time in mandated lockdown passed as smoothly and as tastily as it could."

"In the end, the COVID-19 period turned out to be an excellent learning experience, not only for our international students, but for us, as well," concludes Dahan, who explains that many of the innovations the school developed in response to the pandemic are improvements they plan to keep, from more targeted online marketing campaigns for overseas students to Zoom courses in which students in both Israel and India can participate. "We improved our social and educational infrastructure for overseas students dramatically," agrees Lewenstein. "In fact, there were many students who were able to leave Israel and go home to their families but chose to stay instead. We like to think that was a testament to the excellent work of the International School."





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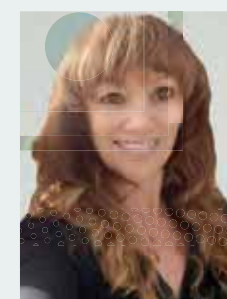


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# FRI ENDS



Heartfelt thanks goes to our most generous donors and partners from Australia, Canada, Europe, Israel, Mexico, South Africa, South America, the United Kingdom, and the United States who, in 2021, supported the following critical projects and goals.







**Jewish Identity projects**  
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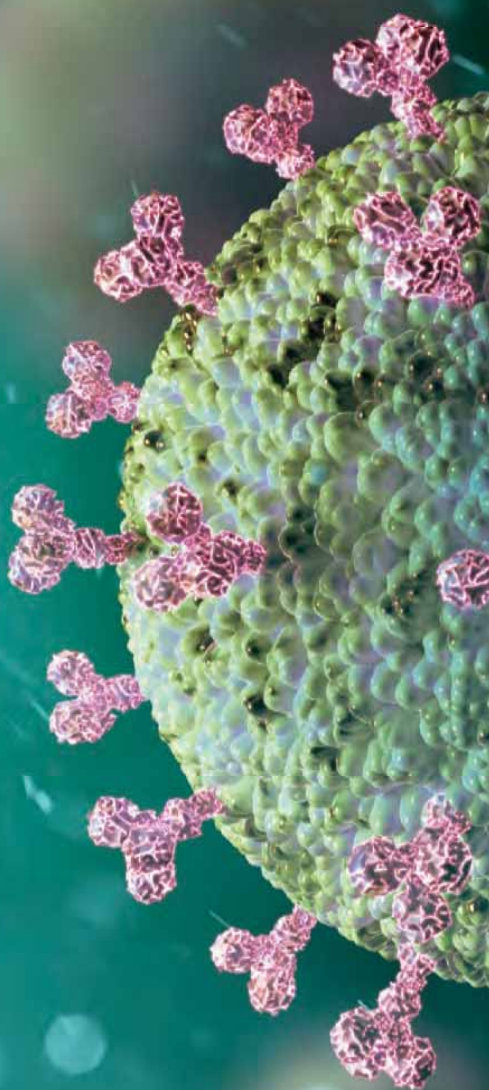


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