

# SCOPIUS

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Celebrating 100 Years of Knowledge & Contributions

**The Hebrew University of Jerusalem, Israel's first university, is a multidisciplinary institution of higher learning and research where intellectual pioneering, cutting-edge discovery, and a passion for learning flourish. It is a center of international repute, with ties extending to the worldwide scientific and academic community, where teaching and research drive innovation and provide the broadest of education for its students. Ranked among the world's leading universities, the Hebrew University is an institution where excellence is emphasized; where advanced, postgraduate study and research are encouraged; and where special programs and conferences attract students and academics from around the world. At its core, the Hebrew University's mission is to develop cutting-edge research, to educate future leaders, and to nurture generations of outstanding scientists and scholars in all fields of learning.**

**6 campuses:** three in Jerusalem (Mount Scopus, Edmond J. Safra, and Ein Kerem) and in Rehovot, Beit Dagan, and Eilat

**3,682 projects in progress** in University departments and some **100** subject-related and interdisciplinary research centers

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**23,000 students**, including **11,500** undergraduates, **6,000** master's students, **2,200** doctoral candidates, and **3,300** overseas, pre-academic students, postdoctoral fellows, and others

**973 faculty members**

This issue of Scopus Magazine commemorates one hundred years since the laying of the cornerstones of the Hebrew University. These pages celebrate the remarkable people, faculty, students, alumni, research, discoveries, events, and milestones that have made us a world-class institution. From the laying of the first cornerstones of the University on the Mount Scopus Campus to expanding the University across six campuses and seven faculties, with a current enrollment of over 23,000 students, the Hebrew University is firmly established as a leading pillar of higher education in Israel and the world.

This issue showcases the history of the University, and envisions what the next one hundred years will hold. The cover art provides a glimpse of the illustrated guide to one hundred significant contributions of the University, which can be found on page 16. The visual tour through our University archives (pages 10-15) tells the story of this institution through aerial photography, Einstein's handwritten manuscripts, works of art, and other priceless objects. In the round table discussion (pages 4-7), our new senior administration team debates how we should develop as an institution and reflects on what makes this university exceptional.

In a special article from Nir Barkat, Jerusalem's Mayor, we hear how the University works hand-in-hand with Jerusalem and the ways in which the University and Jerusalem can continue to grow together. In an intimate conversation with Hebrew University alumna Justice Miriam Naor, former President of the Supreme Court, we receive a rare, first-hand account of the highlights of her career and what she sees as most vital for the University to teach future lawyers.

This issue also provides an "Ask the Expert" feature with internationally-acclaimed Hebrew University professor and serial entrepreneur Oded Shoseyov on his groundbreaking work in biotechnology. Professor Shoseyov encourages us to envision not just the University over the next one hundred years but a new world where science outpaces science fiction.

As we celebrate one hundred years together, it is vital to thank all the people and organizations who have made the success of the University possible, and continue to support our institution. Without the hard work of donors and Friends organizations, our beloved institution would not have come to fruition. Their ongoing collaboration with the University is what makes our future bright and gives us the ability to continue into the next one hundred years as a global beacon of learning and inspiration.



**Asher Cohen**

President

*A. Cohen*



**Michael Federmann**

Chairman,  
Board of Governors

*M. Federmann*

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## Charting the Future

# A Round Table Debate with HU Administration

Scopus Magazine sat down with the Hebrew University's new senior administration team to discuss salient issues affecting the University. As we transition into our next one hundred years as a leading national and international institution, we invited debate about internationalization, student body demographics, the University's primary teaching language, and other issues relevant to students, administrators, faculty, alumni, and donors alike.

**Scopus:** As we celebrate one hundred years since the University's cornerstone laying, what, as the leaders of the University, do you see as some of its greatest accomplishments?

**Yishai:** First of all, I think it's safe to say that the State of Israel would not be what it is or where it is today without the Hebrew University. It would be a vastly different country. Our society, our economy — the University truly and literally shaped this country.

**Asher:** I agree. It's astounding, actually. Everywhere you go, you see the University's mark. The legal system, our Supreme Court judges, prime ministers... Many of them are graduates of our University. And some of the greatest economists who helped shape Israel's economy are our alumni. Even the existence of the entire agricultural sector in Israel is largely due to our Faculty of Agriculture.

**Barak:** And you know, at the inception of the University, between the years 1918-1925, there was a debate about whether to be a research institute without students, or a university, a teaching institution. Eventually the decision to be a teaching institution prevailed and I'm very happy about that. We

have a student body that encourages us to think in a new way, and pushes us to get better every year.

**Yishai:** Yes, and let's recall, the Hebrew University began as a haven, a safe place for scientists, especially those escaping the Holocaust. So many things came out of these beginnings, from scientific inventions to medicine, to Israel's first institute of social work, all critical to the development of the state.

**Re'em:** All great points. I would only add that it's our history of recruiting the best students and faculty that has allowed the University to be such a fundamental player in the country and in the world.

**Scopus:** Going forward, what is the importance of internationalization for the University?

**Oron:** This is a very important question. In the world of academia, student mobility is crucial. Our new Office of International Affairs is embarking on the ambitious goal of making internationalization a priority. We hope that in the next ten years we will send at least 2,000 students abroad annually. When studying abroad, students enrich their education and broaden their perspective. They engage with other cultures

and become more open to the world. Another goal is to bring students from abroad to study here, which is a great way to introduce people to Israel. And by having more international students on our campuses, our Israeli students will have greater exposure to the world.

**Re'em:** Yes, incorporating different perspectives and traditions, new methods and areas of expertise, by bringing people together — this is how great science happens. We are currently recruiting people who are not necessarily obvious candidates for an Israeli university, but we see their talent. In physics, for example, we just recruited someone who isn't Israeli, but he is brilliant; he isn't speaking Hebrew yet, but he'll get there. We're trying to appeal to the international community so that we can continue to grow. This is very important.

**Asher:** We now have a cybersecurity center in collaboration with the Fraunhofer Institute for Secure Information Technology, which is Germany's main applied research institution. In a recent visit, I had the opportunity to participate in working groups comprised of German and Israeli graduate students. The results were much better than any one of these groups could have accomplished on their own. Each group brought its own cultural style and background, which led to a very interesting and fruitful exchange. More perspectives were brought to the scientific table, which led to greater innovation in research.

**Yishai:** And in today's world, we're also trying to create science across disciplines. If, for example, we want to solve complex issues in the brain sciences, we need to enlist the research of psychologists, physicians, computer scientists, and cognitive scientists, as we have done at the Edmond and Lily Safra Center for Brain Sciences. This is vital for research in the 21st century. People from different disciplines are increasingly working together to solve problems, and it's this sort of collaboration that is the future.

**Yossi:** From the institutional side, it's important to remember how the global community has always shaped and supported the University. Since its inception, our network of Friends organizations has ensured that we have the support to maintain the highest standards of research and attract the best students and faculty. You cannot but admire and appreciate the commitment and devotion our Friends organizations have to this institution. From Albert Einstein's fundraising trip

to the United States in 1921, until today, I see this as one of the most central aspects of internationalization - when we look back to the founding of the University, and looking forward, to secure its future success.

**Scopus: Do you see Hebrew remaining the official language of the University?**

**Barak:** As a university we are very attractive to international students and faculty, and this is a good thing. However, as a result, I think going forward it will be hard for us to maintain Hebrew as the exclusive language of teaching. And I don't see this in a bad light. Unlike at the time of the University's founding, Hebrew is not at risk. It's no longer vital for the University to "safeguard" the language. And if we insist that Hebrew becomes the exclusive language of the University, we will struggle to attract a sufficient number of international students, which is where our future lies.

**Re'em:** It's a very important issue. I agree with Barak in that I think Hebrew as a language is established, and unlike at the University's founding, there isn't a real concern that people will not be speaking Hebrew down the road. If we want to become more international, more connected globally, we should be more English-oriented.

**Oron:** We aren't going to start teaching all of our courses in English, but we will offer more undergraduate courses in English. And it's not just for the benefit of international students. It's a great way for our Israeli students to improve their English and meet international students. In some of our academic units, it's already mandatory for Israeli undergraduates to take at least one course in English. In the experimental sciences, courses are taught in English if there is at least one non-Hebrew speaker attending the class. The Israeli students in these classes understand that if they pursue a career in research, their career will undoubtedly have to be in English. But I don't think the University as a whole will abandon Hebrew as its central working language.

**Asher:** Yes, we are committed to teaching Israeli students in Hebrew, I think that needs to be stated. So I don't really foresee fundamental changes; we will always have teaching programs in Hebrew. That said, our English teaching programs are an addition, a benefit. It's clear that we cannot be a leading university if we don't offer a high level of mobility

and world-class research. And these factors are tied together; you can't have student mobility without world-class research.

**Scopus: We've talked about research. What about our student body?**

**Re'em:** The students here are superb. It's astounding how amazing they are. They are smart and ambitious. They are older than the average American or European student, which shows in their maturity. Many of them are already married, some of my students have kids. They are as good as some of the best students I've seen at any of the top universities around the world.

**Barak:** I would add that our students aren't only the most brilliant; they're also community-driven, with a real sense of social responsibility. And I see a correlation between academic achievement and social responsibility. Maybe it's because we are in Jerusalem and this attracts all types of students, which makes for a good mix of perspectives and cultural views on campus. Perhaps it's because of this that our students have an appreciation for how fortunate they are to study here. They are aware that not all students in Israel are as lucky as they are, and they make real efforts to give back to the community.

**Asher:** We work hard to foster this environment on campus; it's a priority to make our campus population representative of the country as a whole. In fact, we are now nearing the end of a ten-year initiative with the government to increase the number of Arab and ultra-Orthodox Jewish students on our campuses. In the Arab sector we want to get to a point where the percentage here is similar to their percentage in the general population. We're not there yet, partly because this population tends to live in the north and study in northern universities, but this still remains our goal. With the Jewish ultra-Orthodox population, we have a few hundred on our campuses, and in another ten years we hope to increase this number to reach a thousand students. It's not a simple task, but we are committed to it. These initiatives will only further our goal of having the most talented and driven student body.

**Yossi:** It's true, students of all backgrounds form the best learning environment at a university. And education really is what defines our country. As a Jerusalemite who cares deeply about this city, and

as a Hebrew University alumnus who really cares about this University, I'm continually delighted and impressed by the quality of our students. It's what makes the University as stellar as it is; nothing can substitute for a top-rate student body.

**Scopus: Looking to the future, where do you see the University headed?**

**Re'em:** I'm very excited about where we are headed. In the sciences, for example, we're considering creating a center for big data research that will provide services for other departments. This is a new model that we haven't seen yet, and it's a good example of how the University is thinking creatively about how to deal with our rapidly changing world. We know we have competition, which means that we have to keep working harder, and by investing a lot in young faculty, we hold the key to our future. If we recruit and retain the best people, and give them what they need, they will do the rest. I truly believe that.

**Yossi:** You're right. I would add that our main challenge is to continue to give our scientists what they need in order to excel. Science is becoming very costly and we have an obligation to make sure our scientists have the means to conduct excellent research at the highest level. Our greatest accomplishments come from fulfilling the original mission of the University — to cure the world, to feed the world, to understand the world, and to advance humanity.

**Barak:** If the past teaches us something, anything really, it's that change happens at a much slower pace than we imagine. And this isn't necessarily a bad thing. I hope that in the future we will still have classes where people can interact and integrate instead of just log-in online. We are undergoing a technological revolution and becoming much more globalized, but I'm counting on the fact that in the future we will not see an elimination of core features that make the University a preeminent place of learning and research. We need to harness what has worked so far, what is working for us now, and think innovatively about how to move forward through the next hundred years. With this mindset, I'm confident that the Hebrew University will continue to be a beacon of research, learning, and opportunity for the country and for the world. ■

# Hebrew University, Jerusalem's Cornerstone

By Mayor Nir Barkat

This past century witnessed many historical changes for our country, from the birth of the State of Israel to the reunification of Jerusalem, our eternal capital. I was seven years old when the Six Day War broke out, and Israel was preparing for the worst. I remember helping soldiers dig trenches in my backyard and hiding with my brothers under our beds. When the war finished, I emerged onto the streets of the reunified city and was puzzled by the sight of adults crying in the streets around me. We had won the war — so why were so many in tears? It was only later, when I became an adult myself, that I understood the source of the overwhelming emotion I saw on that day in 1967. The people walking the streets of a reunified Jerusalem recognized in those moments that Jerusalem could never be taken for granted.

Jerusalem, a symbol of light and a beacon of hope, tolerance, and inclusiveness in the Middle East, is flourishing. Life in Jerusalem does not distinguish between east and west, north and south; as you walk the streets, it is easy to spot people of different religions walking side by side, coexisting in our



restaurants, theaters, hospitals, and academic institutions. Since its founding three thousand years ago, Jerusalem has been a cultural home for poets and artists, and serves as a spiritual center for Jews and all people of the world.

A city that is both ancient and modern, Jerusalem is home to the most cutting-edge, advanced technologies in the world. The growth driving our city is due in large part to the success of our educational institutions, with the Hebrew University as a driving force for educational inspiration, innovation, and community development. I have personally seen how the University draws the most talented researchers and outstanding students from the entire country and from around the world and enriches Jerusalem through its institutional initiatives. At the Hebrew University, culture is born, science is developed, and tolerance is practiced.

Jerusalem is currently undergoing an unparalleled renaissance in our bio-med and high-tech ecosystems. In 2017, Jerusalem was included in the top 25 high-tech cities in the world, and in the



**Faculty and students at the University create a vibrant, productive hub of industry and innovation, which feeds directly into Jerusalem's cultural, scientific, business, educational, and industrial sectors.**

past two years alone there has been a 26 percent increase in jobs in the industry, rapidly growing and modernizing every year. Last year alone, over 600 companies opened their doors in our capital. Jerusalem is home to some of the most innovative companies in the world, like Mobileye, the global leader in developing advanced vision-based systems for driver assistance. Based in Jerusalem and developed by researchers at the Hebrew University, Mobileye was just acquired by Intel for \$15 billion, the largest tech buyout in Israeli history.

As Mayor of Jerusalem, I count all of Jerusalem's 283,000 students as my children and I hold the city's education portfolio myself. The city's education system has undergone comprehensive reforms since I began my term as Mayor. We have shuttered schools that underperform, and replicated high-performing schools across the city. We have completely done away with zoning, so all schools need to demonstrate that they are competitive and providing the highest level of education for our students.

My philosophy is never to push but to pull — and it is working. Jerusalem's Arab residents have noticed

the opportunities that an Israeli matriculation certificate provides and we are seeing a dramatic increase in demand for new Arab Israeli schools in East Jerusalem. In 2014, only 1,000 Arab students were learning the Israeli curriculum. Today, that number is close to 6,000. While we are working to catch up with years of neglect in the education system across the board, we have recently approved an innovative, one billion shekel financing plan to redress the city's 3,800 classroom shortage by building 1,000 new classrooms. The children are our future — and the future looks very bright.

As Jerusalem's industries grow and develop, our goal is to facilitate the success of our businesses and entrepreneurs. In this way, the city's key forces that drive growth have a symbiotic relationship with the Hebrew University. Faculty and students at the University create a vibrant, productive hub of industry and innovation, which feeds directly into Jerusalem's cultural, scientific, business, educational, and industrial sectors. This relationship will undoubtedly help build the future success of Jerusalem and of the country as a whole. ■

# Preserving our Legacy

# A Walk Through the Archives

By Michal Mor, Hebrew University Curator and Sharon Lenga, Director, Hebrew University's Berman Medical Library

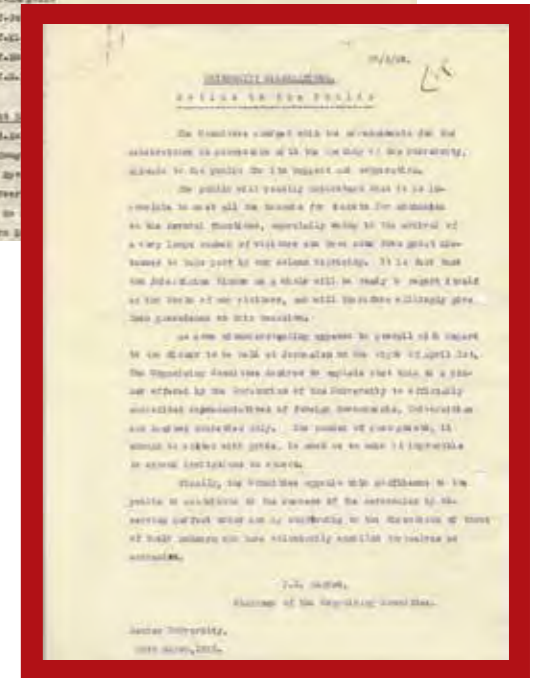
As a forward-thinking, innovative institution, the University naturally looks ahead to the future. But looking to its past is also necessary; it provides us with a critical appreciation for our University's inspiring and noteworthy journey to-date. This article, which came to fruition through a partnership among archivists across our campuses, explores collections from the University's many archives, providing a glimpse into the past in a way that words alone cannot. Each archive speaks a different artistic language, and through this collaboration we gain rare insight into the history of the University, of Israel, and ultimately, the global Jewish community.

In 1928 the first Governor of the University, Professor YL Magnes, emphasized the importance of establishing University archives; he saw the historical and cultural value archives would hold for future generations. Because of his vision we now have archives across five campuses, in bookshelves, storage units, display cases, and galleries. Through collections of photographs, letters, artworks, objects, specimens, and recordings, a tour through these archives provides a unique window into the past one hundred years since the University's inception, and encourages us to dream about what the next one hundred years might hold.

## The University Archive

The University Archive includes invaluable records that preserve our institutional memory, allowing us to trace the processes that led to significant academic and administrative decisions since the University's beginnings. The Archive began three years after the founding of the University and was housed on the Mount Scopus campus until the campus was isolated during the War of Independence in 1948. The archival material was eventually recovered and transported in armored vehicles to a number of buildings in Jerusalem. With the opening of the Givat Ram Campus in 1958, the archive was transferred, only to be returned to Mount Scopus in 1979. Approximately five percent of materials were lost during this period. Today the archival content extends over 420 meters with close to 33,500 files. Numbered archival boxes are stored on shelves behind fire-proof metal doors.

The Archive's "Provisional Organizing Committee" document provides a fascinating look into the beginnings of the University. This document indicates the organizational roles and functions of all those involved in the celebrations marking the opening of the University, providing a first-hand account of the guidelines that the organizing committee in Jerusalem received from those overseas, including instructions on how to arrange the opening ceremony, seating preferences, flower arrangements, and guest lists.



## The Aerial Photography Archive

Aerial photographs provide a unique visual record of events, map surfaces of the past, and monitor changes in the landscape. These photographs document landscapes from specific times, incidental or planned; they constitute two- and three-dimensional analog cartographic models. Aerial photography has transitioned from analog to digital and in recent years has undergone revolutionary changes with the introduction of drone technology. Aerial photography is now able to capture very high spatial resolutions on the scale of a single centimeter using several spectral channels. This archive is managed by the Center for Computational Geography, and contain roughly 100,000 photographs that function as a source for research.

The Aerial Photography Archive contains photographs dating back to the years of 1917-18, some of which were taken by Prussian and Australian flight squadrons during World War I. The archive also contains photographs from the early period of the British Mandate, including a project during the years of 1944-48 to systematically map Palestine. The Jewish Agency and even the Palmach used these photographs during the War of Independence.

## The Art Collections Archive

The University's extensive art collection gives those who walk through its campuses a chance to take part in its vibrant cultural spirit. The University's Art Collections Archive began with photographs acquired in 1929 from the British Museum and the Berlin Museum, and the exhibition was open to students in 1938. Dr. David Werner, the administrative director of the University at the time, wrote: "My hope is that such exhibitions will be a permanent fixture in the University, and that we will achieve our dual goal of showcasing the University to the public through art, while at the same time providing the student body with a rich cultural experience." Since then many unique pieces have been added. With the opening of the Givat Ram campus, later to become the Edmond J. Safra Campus, a Rudy Lehman sculpture was placed in the Evolution Garden. In the 1970s, a Moshe Kadishman sculpture, "Circles," was unveiled on the Mount Scopus campus. The collection also includes works in oil by Reuven Rubin, Picasso, and Dali.



Exhibitions of this archive represent the connection between academia and art, and are on display around the University. One particular collection in the archive was created by researchers in the University's Nanoscience Department. In a joint effort, artists and researchers explored the concept of "nano," which resulted in a series of scientifically-inspired artworks and choreographed dance videos. One of these works deals with angiogenesis, the process of blood vessel growth. Nanotechnology enables an "exploitation" of the defects of this process, which led to the creation of a drug carrying nanoparticles.

## The Medical Library Archive

This archive teaches us the value of looking back in order to appreciate new discoveries, preserving past knowledge in order to help us build a better future. It houses a permanent art museum, called Go and Learn, which showcases historical materials relevant to medical research and innovations. Among other materials, the museum displays stamp collections, Ex Libris book plates, and fascinating personal letters of renown physicians.



Dr. Hillel Yaffe's book on malaria in Israel is one of the treasures of this archive; Here you can see a graphic, historical account of malaria and the ideas and methods this physician employed to manage the epidemic.

## The Historical Photography Archive of the Division for Advancement and External Relations

Photography is described as a light recording that creates a connection between the creator, the viewer, and the subject. A photograph captures a fleeting moment in time, in a continuous and rich space of reality, as envisioned by the photographer. The eye absorbs reality in a fragmented manner and focuses on a specific moment, and photography helps us see things anew, enabling us to cognitively incorporate missing segments of our reality. The photographs in this collection help to tell the story of the University, weaving together its rich history through visual records of notable people, events, and celebrations, reminding us of the diverse circumstances that shaped its history and ultimately the country and global community.

Historic photographs of this collection include University milestones, such as the laying of its cornerstones, the growth and achievements of University faculties and departments, and many VIP visits to the University.

Top: Yitzhak Rabin receiving an Honorary Doctorate in 1967. Bottom: Students in front of the pagoda connecting what was then the Jewish National and University Library to the Rosenbloom Memorial Building for Jewish Studies on the Mount Scopus Campus, 1947.





## The Natural History Archive

This archive documents animal, plant, and mineral life, from early geological eras to the present day. This unique collection forms an accessible repository for studying changes that occur in the flora and fauna of Israel and the Mediterranean basin. The specimens in this archive document species variability through time and space, forming a collection that is integral to the heritage of our region. This archive provides a look into the work of naturalists, evolutionary biologists, and taxonomists.

The Natural History Archive contains the collections of Professor Israel Aharoni, the first zoologist in Israel, who curated the fauna of the region at the beginning of the 20th century. One of Aharoni's discoveries was wild wheat, the ancestor to the wheat used today for bread. Aharoni used this finding to leverage agricultural research in Israel.



## The Spielberg Jewish Film Archive

This archive has the largest collection worldwide of films with Jewish themes. It contains over 18,000 titles of movies from various periods, from the end of the Ottoman Period to the present day, taking us on a visual journey through Jewish history. The archive includes films in almost all visual formats including video and digital files. It has an impressive, readily available digital repository. These materials are kept in conditions which preserve the high quality of each file.

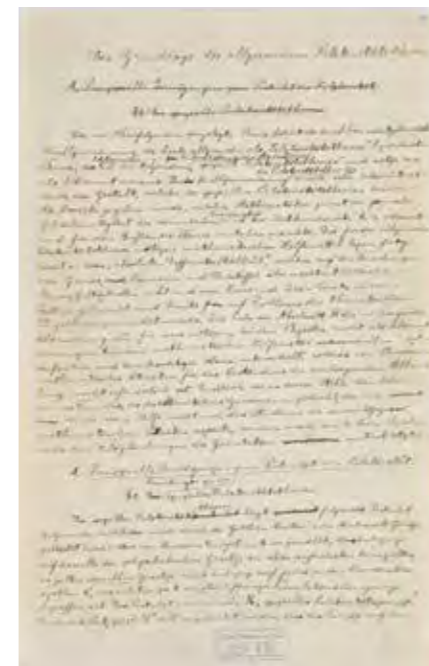
One of the Archive's most interesting historic films is the home movie of the P. Winnick family, an American Jewish family who, in the summer of 1925, sailed to the shores of Palestine. This two-hour long film documents the family's journey to Palestine, providing a rare look into the conditions of the time.

## The Einstein Archives

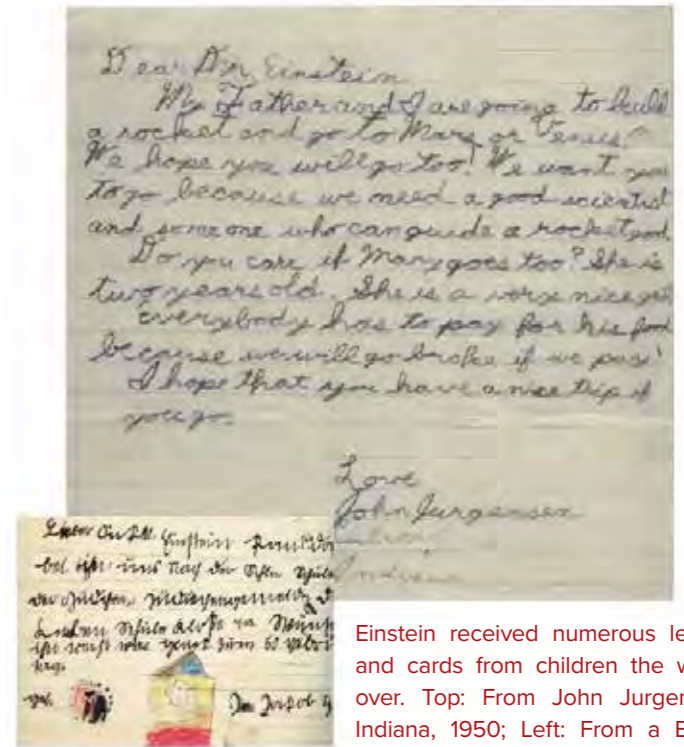
This archive owes its existence to Albert Einstein's Last Will and Testament. Einstein bequeathed all his writings and their legal rights to the Hebrew University. Einstein was indispensable in the early efforts to establish the University. The collections' holdings number over 80,000 documents, many of them in Einstein's own handwriting. This archive contains several types of historical documents, including the original manuscript of Einstein's General Theory of Relativity, drafts of Einstein's lectures, calculations on single sheets, medals and letters he received, photographs, and other materials, giving us a priceless glimpse into Einstein's life and work.

Nearly all the materials of this archive have been digitized and are available on request. Several thousand images of original Einstein documents are accessible on the archive's website and all images are free of charge for personal and nonprofit use.

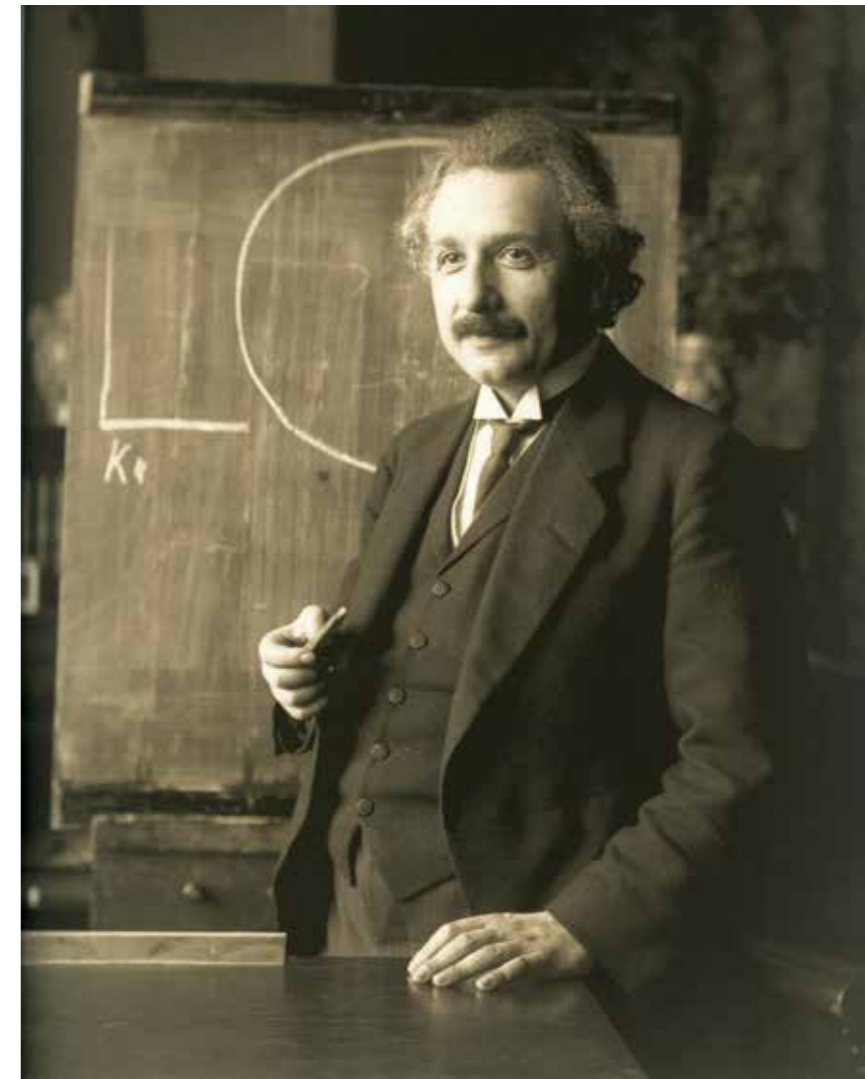
The Albert Einstein Archives are located on the second floor of the Levi Building on the Edmond J. Safra campus.



First page of the original manuscript of Einstein's General Theory of Relativity.

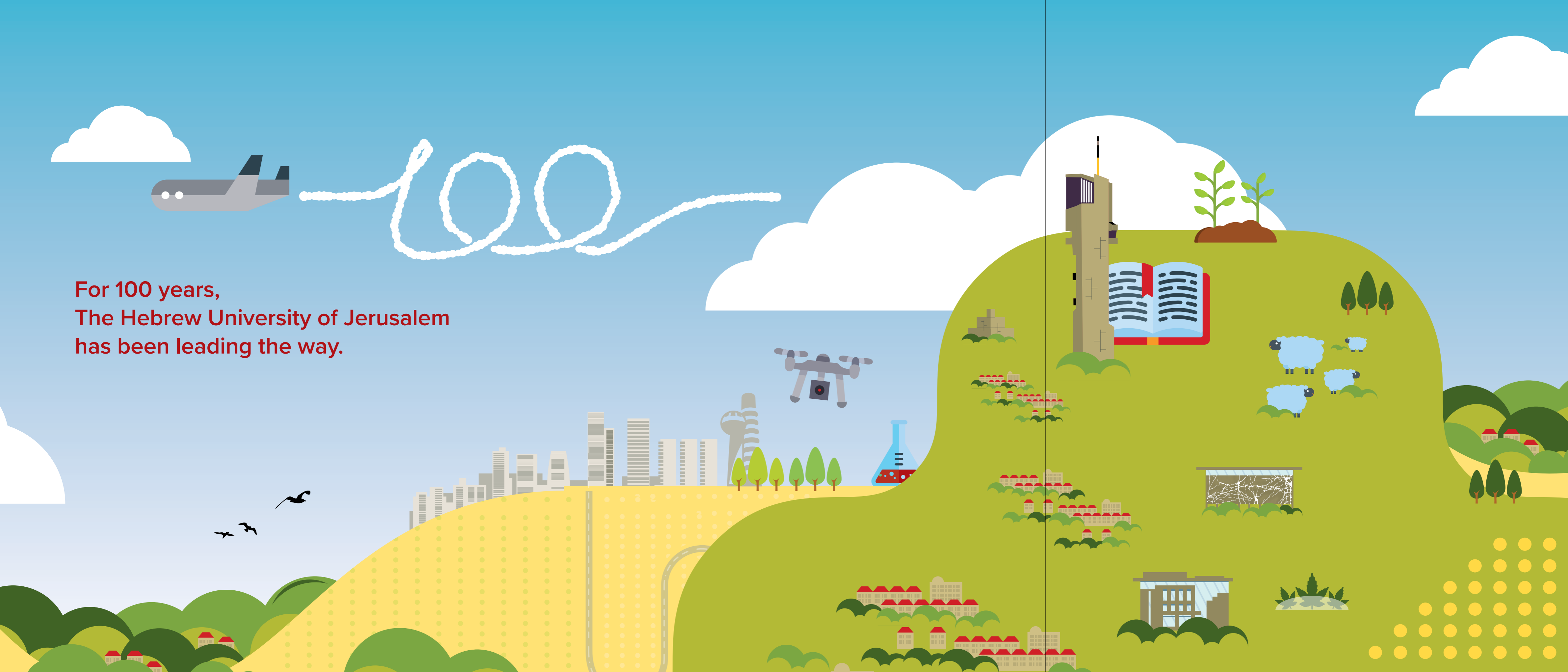


Einstein received numerous letters and cards from children the world over. Top: From John Jurgensen, Indiana, 1950; Left: From a Berlin schoolchild on the occasion of Einstein's 50th birthday, 1929.





For 100 years,  
The Hebrew University of Jerusalem  
has been leading the way.





## EDUCATION

- Home Instruction Program for Preschool Youngsters (HIPPY), an early education intervention program designed to help parents with limited formal education prepare their preschoolers for school, developed in 1969 by Dr. Avima Lombard at HU's National Council of Jewish Women Research Institute for Innovation in Education.
- Future Directions, a program specializing in studying career decision-making and developing computer-assisted career guidance systems that facilitate decision-making process, led by Prof. Itamar Gati.
- The Metafora Project, a Computer-Supported Collaborative Learning (CSCL) system to better enable 12 to 16-year-old students learn science and mathematics, spearheaded by Prof. Baruch Schwarz.
- Pioneering theories and methodologies for education and introducing models of interdisciplinary learning into the education system, led by Prof. Moshe Caspi.

## LAW

- Created a foundational Hebrew legal lexicon.
- Staffed the Supreme Court with renowned legal minds such as Aharon Barak, Yitzhak Zamir, Dorit Beinisch, Miriam Naor, Salim Joubran, and many more.
- Legal clinics offering pro bono legal services to the most disadvantaged populations of Jerusalem.
- Jewish Law Library, the most important collection in the world of Jewish law literature.
- The Minerva Center for Human Rights, Israel's preeminent academic center devoted to human rights education and research.
- The Law and Cyber Security Research Program, developing methods for the prevention and regulation of cyber threats and related law enforcement challenges.
- Home to the Sacher Institute, Israel's leading publishing house for legal academic publications.



## MEDICINE

- The establishment of the Hebrew University Hadassah Medical School of Medicine in 1949, Israel's first school of medicine.
- The Hebrew version of the Hippocratic Oath, written by the Hebrew University Hadassah Medical School's Professor (and subsequent Dean) Lipman-Heilprin in 1952, for its first graduating class.
- The Promise of the Medical Student, established in 1998, an oath taken by students of medicine before commencing their clinical studies, composed by the Hebrew University Hadassah Medical School's Prof. Yaakov Naparstek, and later adopted by other medical schools in Israel.
- The Hebrew University Hadassah Braun School of Public Health and Community Medicine's International Master of Public Health (IMPH), with over 850 students and graduates from 96 countries.
- Groundbreaking contributions in epigenetics and the discovery of DNA methylation, deciphering its role in biology and medicine, led by Prof. Howard Cedar.
- Discovery of the causes and mechanisms by which pain and other sensations are produced and perceived, crucial for therapies and drugs for pain conditions, led by Prof. Baruch Minke.
- Exelon-A, a drug for the treatment of Alzheimer's disease, reducing behavioral abnormalities, improving cognition, and delaying further decline, developed by Prof. Marta Weinstock-Rosin.
- DOXIL, a drug developed by Prof. Chezy Barenholz, used extensively to treat ovarian and breast cancer.
- Deep brain stimulation (DBS), developed by Prof. Hagai Bergman, used as an effective treatment for Parkinson's.
- Pivotal approach to trauma care which substantially reduces mortality rates for all levels of injury, developed by Prof. Avraham Rivkind at the Center for Shock and Trauma in the Hebrew University Hadassah Medical School.
- Israel's first Hematopoietic Stem Cell Transplantation (HSCT), or Bone Marrow Transplantation (BMT), performed in 1978 at the Hematology Department in Hadassah University Hospital by Dr. Ella Naparstek and Dr. Yaakov Naparstek.
- A new drug for Cystic Fibrosis, developed by American company PTC Therapeutics, based on the research of Prof. Michael Wilschanski and Prof. Eitan Kerem of Hadassah Medical Center.
- In 1979, the first to develop epidural morphine for the treatment of pain, bringing great respect to Israeli anesthesiologists and to the University.
- Groundbreaking research into cannabis through the work of the "father of medical marijuana," Professor of Pharmacology Raphael Mechoulam.



## SOCIAL WORK

- First school of social work in Israel, opening an undergraduate program in 1958 and an MSW in 1970.
- The Autism Center, the first interdisciplinary university-based autism center in the Middle East.
- The Center for Disability Studies, the first of its kind in Israel.

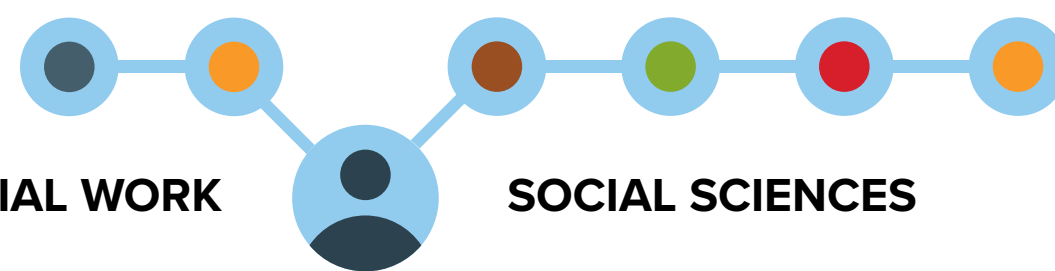
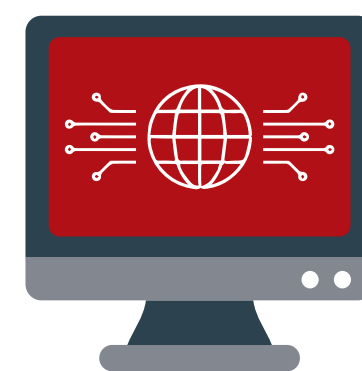


## DENTAL MEDICINE

- 1953 inauguration of the Dental School, Israel's first institution to offer proper training in dentistry.
- Establishment in 1990 of the University's Research Institute of Dental Sciences, the first and only of its kind in Israel.
- Free dental services offered to Holocaust survivors in student clinics.
- Training for individuals with special needs to work in dental services.
- PerioChip, a groundbreaking technology for the treatment of periodontal diseases, manufactured in Israel and distributed worldwide.

## COMPUTER SCIENCES

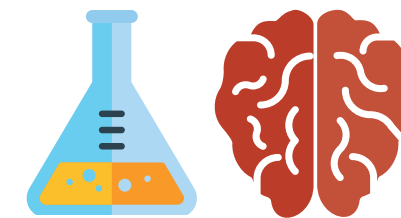
- Mobileye, the global leader in Advanced Driver Assistance Systems (ADAS) and autonomous driving.
- Briefcam, the world leader in video surveillance software.
- ExLibris, the standard software used in academic libraries worldwide.
- BRM, the first antivirus company in the world.
- Check Point, the first firewall company in the world, developed by Computer Science alumni, Gil Shwed, Shlomo Kramer, and Marius Nacht.
- The basis of public key cryptography, used in internet commerce, developed through Prof. Michael Rabin's research in primality testing.
- Fault-tolerant quantum computing, the basis of quantum computing in the presence of errors, developed by Prof. Dorit Aharonov and Prof. Michael Ben-Or.



## SOCIAL SCIENCES

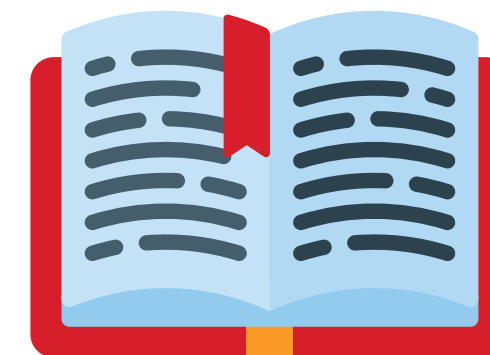
- Establishment of Israeli television through a team headed by Prof. Elihu Katz of the Department of Communications.
- Glocal International Development, an award-winning, interdisciplinary M.A. program that applies academic research to marginalized communities and development organizations across the globe.
- Founding the modern geo-historical school of thought in Israel, which combines the fields of history, geography, and archaeology, spearheaded by Land of Israel Studies Prof. Yehoshua Ben-Aryeh.
- Theory about the universal content and structure of the human value system, impacting research in organizational behavior, marketing, and political and developmental psychology, developed by Professor of Psychology Shalom Schwartz, one of Israel's leading social psychologists and the most prominent researcher of personal and cultural values in the world.
- Changed the face of economics in Israel, through the work of the late Economics Prof. Dan Petinkin, considered the "father of the Israeli economy" and founder of the Falk Institute for Economic Research in Israel in the Faculty of Social Sciences at the University.
- Developing comparative knowledge of exceptional quality and originality concerning social change and modernization, and relations between culture, belief systems, and political institutions, through the work of the late Prof. of Sociology and Anthropology, Shmuel Noah Eisenstadt.
- The first in Israel to study the influence of cultural traditions on mental distress and ways of coping with it, led by Professor of Sociology and Anthropology Yoram Bilu.
- The books on Georg Wilhelm Friedrich Hegel and Karl Marx by Prof. Shlomo Avineri of the Department of Political Science, which changed the interpretation of their political thought beyond recognition.
- The Harry S. Truman Research Institute for the Advancement of Peace, the first and largest research institute in Israel and the Middle East that studies the advancement of peace in the region.

## SCIENCES



- Groundbreaking discoveries in representation theory by world-renowned Prof. David Kazhdan of the Einstein Institute of Mathematics.
- Internationally-recognized geochemical methods for determining the age of rocks and minerals, a cornerstone of modern geological research, developed by Prof. Yehoshua Kolodny of the Institute of Earth Sciences.
- Pioneering studies in the mechanisms for transmitting information in living cells and consequences of the signaling process in biology, and medicine, developed by the late Prof. Zvi Selinger of the Department of Biology.
- Innovative contributions to the modern theory of chemically reactive collisions and the foundations of dynamical stereochemistry by Prof. Raphael D. Levine.
- Groundbreaking research on the thermodynamics of black holes which formed the basis for the science of Quantum Gravity, through the work of the Racah Institute of Physics' late Prof. Jacob Bekenstein.
- Pioneering the development of a range of sensors, fuel production systems, and solar energy conversion by merging interdisciplinary principles of chemistry, biology and materials by the Institute of Chemistry's Prof. Itamar Willner.
- Innovation of polio immunization and discoveries into virology, led by Life Sciences Prof. Natan Goldblum.
- Numerous and foundational contributions in mathematical logic particularly through groundbreaking work in model and set theory by Prof. Saharon Shelah, of the Einstein Institute of Mathematics.
- Pioneering research in the field of enzyme regulation, central to understanding molecular mechanisms that control protein behavior, led by Prof. Alexander Levizki.
- Game changing contributions to the theory of melting, soft, and disordered physical systems by Prof. Shlomo Alexander.
- Revolutionary contributions to the fundamentals of quantum mechanics and the theory of spectroscopy by Prof. Giulio Racah.
- Mapping of the Sinai Peninsula, studies into the Timna copper deposit, and the Negev Phosporites, through the work of Earth Sciences Prof. Yaacov Bentor.
- Achievements in the area of measure rigidity in ergodic theory and their applications to number theory and classical number theory, through the novel work of Einstein Institute of Mathematics Prof. Elon Lindenstrauss.
- Pioneering research in game theory led by the work of the Center for the Study of Rationality's Prof. Robert J. (Yisrael) Aumann.

## HUMANITIES



- Major contributions to the understanding of the neurobiological basis of neuropathic pain, through the research of Life Sciences Prof. Marshall Devor.
- Major contributions to understanding the genetic mechanisms of common hereditary diseases, led by the work of Department of Genetics Prof. Bathsheva Kerem.
- Unique contributions to Middle East geology and the study of the Dead Sea Rift, through the research of Institute of Earth Sciences Prof. Zvi Garfunkel.
- Establishing Islam and the Middle East as a field of study from historical, linguistic, and philosophical perspectives.
- Key contributions to European history, such as the connection between democracy and totalitarianism.
- Bahá'í Studies, which made possible the publication of key founding texts of the Bahá'í faith from manuscripts in Jerusalem.
- The Center for Jewish Art, its archives, and collections, constituting the largest and most comprehensive body of information on Jewish art in existence.
- The Institute of Hebrew Manuscripts at the National Library, a collection of copies of all Hebrew manuscripts in public and private collections the world over, representing more than 90% of known Hebrew manuscripts.
- The world's first 3D Archeology models, led by Prof. Leore Grosman.
- The Ben Yehuda Dictionary, completed in 1958.
- Discovery, deciphering, and interpreting of the Dead Sea Scrolls, led by Prof. Eleazar Sukenik, and the establishment of The Orion Center for the Study of the Dead Sea Scrolls and Associated Literature.
- Discovering the historical significance of Masada, through excavations led by Prof. Yigal Yadin.
- Major archaeological and historical research into Herodium and the architecture of Herod, the "Architect-King."
- Discovering and analyzing the Cairo Geniza, hundreds of thousands of manuscript leaves covering most of the fields of creativity of the Jews of the Muslim world, representing the output of the bulk of world Jewry from the 8th to the 11th centuries.
- The World Center for Studying Kabbalah, established through the foundational works of the late Professor of Jewish Mysticism Gershon Scholem and Max Cooper Professor Emeritus of Jewish Thought Moshe Idel.
- Major force in preserving and studying Yiddish literature and culture, much of which was destroyed in the Holocaust.
- The first, and still leading, Asian Studies Department in the country (with the first Chinese course given in Israel in 1959).
- The "global center" for Crusade Studies, an entire field of study driven by the late Prof. Yehoshua Prawer.

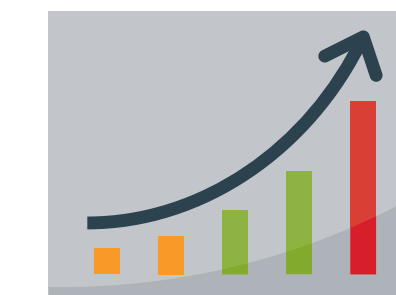
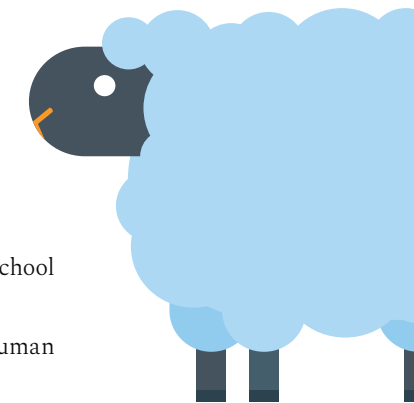
## AGRICULTURE



- Extending the shelf life of industrially-bred tomatoes and improving their taste and disease resistance, through the work of Prof. Nachum Kedar and Prof. Haim Rabinowitch.
- Sequencing the tomato genome, through the work of Prof. Dani Zamir.
- Groundbreaking work in intensive arid-zone agriculture.
- Developments in soil solarization, a non-chemical method to kill soil-borne pathogens and weeds, through the work of Prof. Yaakov Katan.
- Recycling technologies such as wastewater reclamation and composting of solid municipal and agricultural waste.
- Developing passion fruit and other foods capable of protecting the brain and central nervous system to treat diseases such as Parkinson's, through the work of Prof. Alon Samach.
- Understanding crop-plants' adaptations to environmental stresses, through the work of Prof. Zvi Peleg.
- Modifying chickpea crops and chickpea protein for higher nutrition, led by Prof. Ram Reifan.
- Modifying industrial fish growth to meet global demand, through Aquinovo, the work of Prof. Berta Sivan.


## VETERINARY MEDICINE

- The Middle East's only Veterinary School and Veterinary Teaching Hospital.
- Developed gene therapy for sheep and human blindness.



## BUSINESS SCHOOL

- The Jerusalem School of Business Administration is Israel's premier academic business school, a central force in shaping the country's business and management leadership.
- The development of economic models for risk management and contingent claims analysis with applications to corporate finance.
- The remarkable invention of the VIX index (the "fear index") used today at all major exchanges in the world, developed by Prof. Dan Galai and Prof. Menachem Brenner.



# 1000

**CONTRIBUTIONS**  
OF THE HEBREW UNIVERSITY OF JERUSALEM

## 60 Years at the Hebrew University with Professor Robert Aumann

By Susan Goodman

With the foundation of the State of Israel in 1948, Professor Robert (Yisrael) Aumann and his brother resolved to make their lives there. For Aumann, the opportunity to live in Israel represents the culmination of 2,000 years of Jewish yearning and prayer. After completing his studies in mathematics in the US, he realized this dream.

“In 1951,” he recalls, “when I was finishing the first year of my graduate studies at MIT, a talk was given by Professor Avraham Halevi Fraenkel, the world-renowned mathematician from the Hebrew University. I approached him about joining the Hebrew University, and he asked how many papers I had published. I was just 21 at that time. I told him none, and he replied: ‘When you have published 50 come back to me.’”

Aumann’s aspiration to make the Hebrew University of Jerusalem his academic home was an obvious choice. Coming from a religious family, he explains that “Jerusalem is mentioned thousands of

times throughout all Jewish sources, and the longing to return to the Holy City is clearly embedded in the very essence of both past and present. Furthermore, the Mathematics Department at the Hebrew University at that time, although small with only a handful of faculty members, was a stellar group of mathematicians.”

The Department has since greatly expanded, with now more than 30 faculty members, and it remains home to some of the world’s most outstanding mathematicians. Aumann relates, with conspicuous pride, that in the upcoming 2018 International Congress of Mathematicians — the world’s most celebrated gathering of mathematicians, which convenes every four years — two Hebrew University mathematicians will be among the 18 prestigious plenary lecturers, which attract some 3,000 attendees.

In 1955, Aumann completed his doctorate at MIT and married Esther Schlesinger, an Israeli



and graduate in silversmithing from Bezalel in Jerusalem, who was at the time studying in NYC. Aumann began applying for jobs and was soon faced with a dilemma: “I got an offer from the Hebrew University to be a math instructor,” he explains, “in addition to a more lucrative offer from Bell Laboratories, in New Jersey.”

“I agonized for three weeks about which to choose — Bell or Jerusalem. Finally, I said to my wife, ‘let’s make some money and then we can go to Israel’. You have to understand, we were totally penniless, and with a few years’ work in the US, perhaps we would be able to take a car and a fridge with us to Israel. At that time in Israel there was a 300 percent tax on those items. So, I went to Bell and signed all the papers that stipulated that all my inventions would belong to Bell. I returned home, drank coffee with Esther, and said: ‘We did the wrong thing! We’ll get stuck in the relative luxury of the US’. So, the next morning I explained to Bell Labs that I would only stay for one year, an offer which I felt would fulfill my obligation to them. They immediately released me from my commitment but did agree to employ me for the four months before the beginning of the academic year.”

“In the fall of 1956 I began teaching at the Hebrew University. Because Mount Scopus was inaccessible until after 1967, and the Givat Ram campus had yet to be built, the Mathematics Department was housed in the North Wing of the King David Hotel. The Department consisted of a lecture room, a library, and an administrator’s office. The head of the Department, Professor Fraenkel, worked from home. He was always a tremendous support to me, despite the brush-off I received when I first approached him at MIT. I had love and respect for him, and was a pallbearer at his funeral.”

“Teaching was a challenge. In my first year the students complained bitterly when I lectured in English, so in the second semester I switched to Hebrew. However, an even greater challenge, which I reluctantly overcame, was that these classes were scheduled for 8:15 in the morning. Like a lot of mathematicians, I am not a morning person. Sometimes I worked through the night until daylight, put on tefillin, said the morning prayers, and then went to bed. One of my small successes was eventually managing to shift the class to an 8:25 am starting time!”

**Appreciated by his students, Aumann refers to the “satisfaction of teaching” and the joy of meeting students later in their lives who describe his courses as “beautiful.”**

When Aumann was appointed as a tenured senior lecturer in 1964, he approached Professor Aryeh Dvoretzky, an eminent mathematician who was then Dean of the Science Faculty, and asked if the University would help out with his housing, which at that time was a common practice when appointing faculty from abroad. “I thought the meeting was going rather well, and mentioned that Tel Aviv University was considering offering me a position. Suddenly everything changed. He stopped smiling, and became very serious...and told me to go to Tel Aviv! It turns out that he knew better than me how to apply game theory!”

Aumann’s work on developing game theory was the reason he was awarded a Nobel Prize in Economic Sciences in 2005. His interest in this field began at Princeton. “But, you must remember that at that time, in America,” explains Aumann, “anything in mathematics that seemed to be applied, and perhaps useful, was looked down on — and that included game theory.” This disdain for applied math was unknown at the Hebrew University, and he was always encouraged in his research, cooperating for many years with fellow game theorist Professor Michael Maschler.

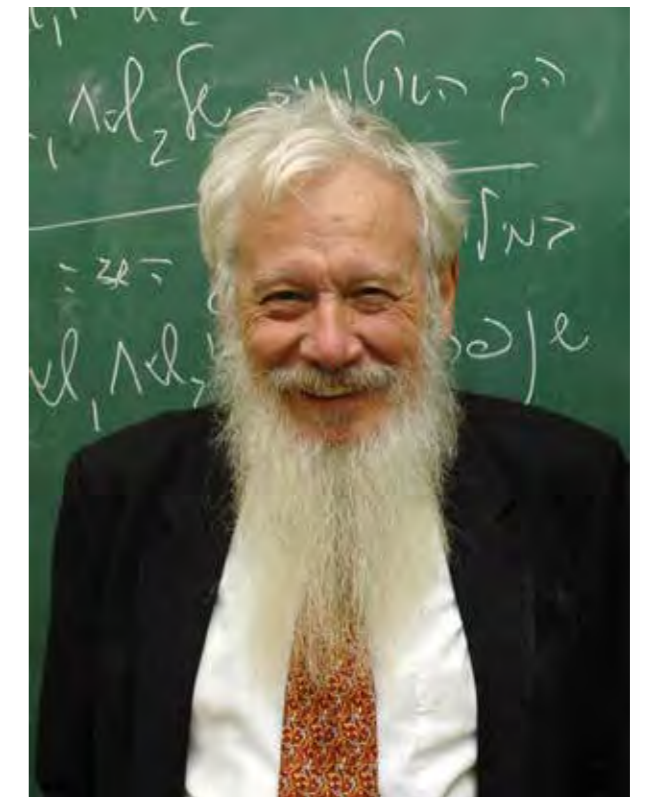
In the late 1960s Aumann ran a math club for high school youth, designed to inspire enthusiasm for the subject. He tells of the first meeting with a group of twenty students. “I asked them if they preferred to hear a weekly lecture or to receive a weekly problem, which they would work on and would be discussed the following week. Seventeen voted for lectures and three voted for the problems. Then one of the three said ‘We win’. I asked him to explain as the others were the majority. He replied that their votes didn’t count because they were imbeciles. I kept the three students and worked with them. One of those students was Gidon Dvoretzky, the son of Prof. Dvoretzky.”

“I got to know these three high school students very well, and Gidon was very good at math. He asked my advice about whether he should join a technical, non-combat army program, which would keep him in the army for at least seven years. I recommended that he do the regular army for three years, and then go on to get his degrees in math. And that is what he chose to do. A short while later, I met his mother; she was very angry with me,

calling me ‘a young idiot, who doesn’t understand what is going on in this country’. She was right.”

Aumann continues: “Gidon was assigned to a combat unit, and signed up for an officer’s course. In 1973, during the Yom Kippur War, he was killed. His mother had died six months earlier, of cancer. I went to see Prof. Dvoretzky sitting shiva. Nine years later, Dvoretzky visited me as I sat shiva for my son Shlomo, who was killed fighting in the 1982 Operation Peace for Galilee.”

Aumann has written movingly of his life in Israel, describing it as “one magnificent tapestry.” And although, as he describes, there have been “bad — very bad — times, like when Shlomo was killed, and my wife Esther died, even these somehow integrate into the magnificent tapestry.” He recalls that “both Shlomo and Esther led beautiful, meaningful lives, affected many people, each in their own way.” He describes the very good times of his life, including “raising a beautiful family” and “seeing the flag of Israel fluttering in the wind, right next to that of Sweden, on the roof of the Grand Hotel in Stockholm,” flying in honor of a mathematician from the Hebrew University who was about to receive a Nobel Prize in Economic Sciences. ■





# Ruth HaCohen: Composing an Interdisciplinary Model in the Humanities

By Susan Goodman

Ruth HaCohen, the Artur Rubinstein Professor of Musicology at the Hebrew University, never anticipated a future in academia, despite having several professors in her family. As a student in the late 1970s she recalls the “deep social and psychological barriers” that made it almost unthinkable for women to consider pursuing an academic career. “We completely lacked the self-assurance that men had to pursue an intellectual future,” she explains. Nevertheless, she has pioneered a path of academic prowess in her field, claiming prestigious awards for her work and initiating highly innovative interdisciplinary programs for students.

Her book, *The Music Libel Against the Jews* (Yale University Press, 2011), which received the 2012 Otto Kinkeldey Award of the American Musicological Society for the most distinguished book in musicology, exemplifies her profound scholarly engagement across the humanities. HaCohen describes herself as “interested in music and culture — with a focus on religion, politics, literature, as well human social and emotional life.” These wide-ranging interests began with her first

degree at the Hebrew University in Musicology and Jewish Thought. She recalls spending many hours sitting on the floor of the National Library pouring over boxes of cards to find books she wanted to read and long days at the music library, listening to rare music recordings. “It was a time when nothing was easily accessible,” she says. “It is very different being a student today... it only takes a few clicks to find what you are looking for.”

In HaCohen’s student days, the Department of Musicology “worked much like a family,” an atmosphere that pervades to this day. The Department was founded in 1965 by a group of young musicologists, who had all studied in different schools abroad, including Professor Ruth Katz, HaCohen’s mentor and later, co-author, whose pioneering research interests included ethnomusicology, opera, philosophy, and music cognition. HaCohen’s graduate work included courses in English literature, art history, philosophy, and comparative literature. This breadth of study fuels her intellectual perspective to this day: “Music,” she says, “is a unique way of understanding how the human mind works — it is at once a deeper and more immediate level of consciousness that gives special insight into literature and art, as well as to social, religious, and political worlds.” While musicology has in recent decades drawn extensively on other fields to deepen our understanding of music, HaCohen’s approach explores how music can significantly contribute to our understanding of those other fields as well. Her books and writings have made her preeminent in this expansive conception of musicology. She has recently published a book with her life partner, Professor Emeritus Yaron Ezrahi, from the Department of Political Science, entitled *Composing Power, Singing Freedom* (Van Leer and Hakibbutz Hameuchad, 2017, in Hebrew). This book explores, both theoretically and historically, the interplay of music and politics in the West across various regimes, documenting moments of great hope and deep despair.

It is her lifelong conviction of the importance of interdisciplinary work that led her to forge initiatives that enrich the intellectual lives of students in the Faculties of Humanities and Social Sciences at the University. Driven by a determination

**Driven by a determination to keep the humanities a flourishing intellectual experience for students, HaCohen reflects that it is through these studies that we explore the very essence of what it means to be human.**

to keep the humanities a flourishing intellectual experience for students, HaCohen reflects that it is through these studies that we explore the very essence of what it means to be human. To this end, HaCohen describes an initiative she helped establish about a decade ago, together with three other young professors in the humanities (professors Ronnie Ellenblum, Ilana Pardes, and Gannit Ankori). Their goal was to set up a program to “cherish our graduate students... who were isolated in their disciplines and not receiving the opportunities to develop themselves through interaction with like-minded people.” The idea was warmly received by then-president of the University, Professor Menachem Magidor, and it was with this initiative that the honors program for doctoral students in the humanities began.

“New initiatives were always welcomed by the University” explains HaCohen, as she outlines other interdisciplinary projects she has championed. Notably, she was Director of the Martin Buber Society of Fellows from 2014 to 2017, which is housed in the Jack, Joseph, & Morton Mandel School for Advanced Studies in the Humanities. This joint venture between the Hebrew University and the German Federal Ministry of Education and Research, fosters interdisciplinary and intercultural academic discourse at the highest level among outstanding young post-doctoral scholars from Israel and Germany, together with select senior colleagues.



Photo by Dayne Topkin

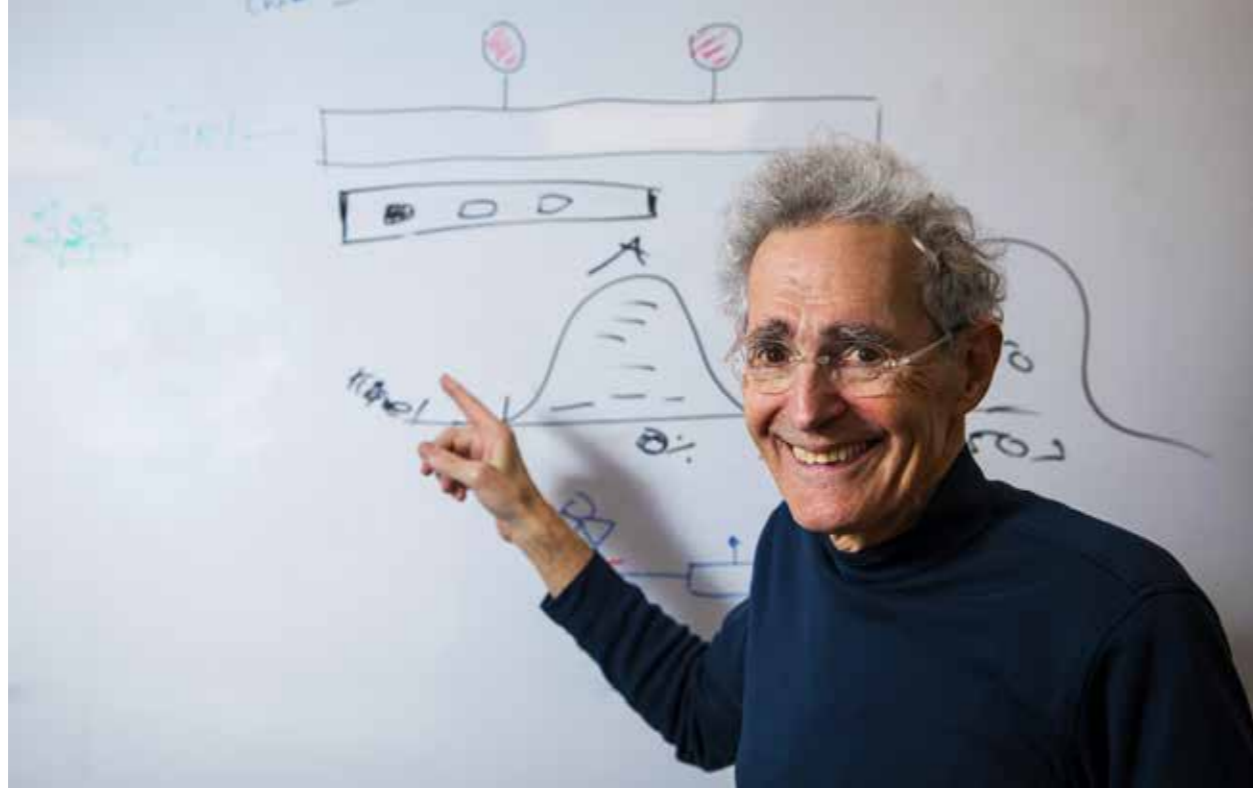
HaCohen speaks enthusiastically about how a “community of scholars coming from different fields and scholarly traditions learn to talk to each other” in this nurturing environment, and how it has produced outstanding scholars who are employed in prestigious academic institutions throughout the world, including, of course, at the Hebrew University.

As the Director of the School of Arts from 2013 to 2015, which brings together students in musicology, theater, and art history, she launched, with colleagues from the Hebrew University’s Jerusalem School of Business Administration, a new undergraduate program for art management, providing students with special courses that “bridge across these different subject areas” and the opportunity to have an internship in their third year at a gallery, museum, or performing arts center. The first cohort has successfully graduated and found promising jobs in various artistic institutions, while also continuing their studies in their respective artistic fields.

Throughout her working life, HaCohen has combined a wide range of academic, social, and cultural interests, in addition to being a mother, and

most recently, a grandmother. She exudes passion for both frontier-research and teaching, which she regards as interconnected.

Hebrew University students are, she says, “among the best in the world, even better now than about twenty years ago.” Possibly, she suggests, this is because “Israeli students have a higher level of thinking; young people in Israel are exposed from a very early age to existential political issues, whether they like it or not.” This “inspires debate and facilitates critical thinking.” HaCohen especially welcomes Israeli students’ willingness to learn and notes that “students are grateful when you introduce them to ideas and inspiration, willing to explore new modes of thought and cultural worlds. You can feel when their eyes are being opened — and that gives a teacher a great deal of satisfaction.” ■



# Leading Scientific Advancements with Professor Howard Cedar

By Susan Goodman

Professor Howard Cedar was completing his US military service as a researcher in a National Institutes of Health (NIH) lab in Washington, DC, when, in 1973, the opportunity to take up a post at the Hebrew University Medical School made it possible for him to move to Israel. Fellow scientists at the NIH gave their colleague many good reasons not to accept this job offer. The forebodings of his colleagues included the substantial drop in salary and the poor laboratory facilities available in Israel at that time.

“They were right about everything,” Cedar concedes, “but there was one important thing they hadn’t thought of, which makes academic life in Israel totally unique.” What none of them knew

about, and what Cedar would soon discover, was that “Israeli students are amazing; they’re smart, devoted, motivated — just fantastic. Many of these students have played an important part in my work.” Israel produces such exceptional students, he explains, “because of Israeli culture, and this includes things that you don’t necessarily learn in school — it’s from the home, the environment.” The value of learning, he says, “is part and parcel of Jewish tradition. It’s not about going to Harvard, or MIT. There is a desire to study, to learn. Asking questions — criticizing answers — it’s all part of the culture.”

Cedar insists he went through a steep learning curve when he first arrived at the Hebrew Univer-

sity with his wife and two small children. Finally leaving his student days behind him, he had to learn how a university functioned — from getting more lab space to navigating promotions. He also had to adjust to the fact that the sophisticated equipment he had instant access to in an American lab was now shared equipment at the Hebrew University. This arrangement continues to this day as it guarantees that expensive equipment is utilized to its maximum potential.

It wasn’t just the workings of the University that were a challenge to the newly-arrived Cedar and his family. Nothing was as easy as it is today. Renting an apartment, getting the kids into a school — everything was slow and bureaucratic. “Even getting a phone took a very long time,” he recalls, “until a doctor friend spoke to a friend at the phone company to speed things up.” And, after only four years in Israel, he was called up for 18 months of service in the Israel Defense Forces (IDF).

For his service in the IDF, Cedar was sent to work in the public health unit of the medical corps, where he conducted research into how to protect soldiers from hearing loss which can result from using armaments. He also investigated why there were so many driving accidents in the army. It soon became clear to him that the main cause was driving while intoxicated, which he discovered through blood samples. However, soldiers filling in questionnaires never registered any intake of alcohol. It wasn’t that they were being evasive, he soon realized. Further inquiries revealed that soldiers only regarded imbibing spirits and wine as ‘truly drinking’, something they never did. They did however readily admit to downing seven or eight bottles of beer daily. As a result of Cedar’s findings, the Shekem food and snack stores on army bases are still prohibited from selling beer.

After his IDF service and upon returning to the Hebrew University, Cedar reopened his lab. He continued what would become groundbreaking research into DNA, working with fellow Hebrew University faculty member Professor Aharon Razin. It was their collaboration that produced fundamental discoveries relating to DNA methylation — the control mechanism that turns genes on and off. Jointly they have received some of the greatest accolades and prizes awarded

to scientists, including the Wolf Prize (2008); the Canadian Gairdner International Award (2011); and the Louisa Gross Horwitz Prize (2016).

Cedar is swift to acknowledge the importance of the contribution of colleagues and students to his research, and notes how scientists in Israel, especially those in medicine, are driven by the desire to benefit humankind. This desire, says Cedar, is derived from Jewish precepts, and is embodied in the culture.

He tells a story of a high-level government delegation from an OECD country that came to Israel several years ago on a fact-finding mission to learn how they might improve the scientific and technical infrastructure in their home country. “They came to speak to me in my office,” says Cedar, and “I spent some time describing the unique culture in Israel and how I attribute this to the success of the scientific and technological industries in our country. Their Minister of Science then exclaimed, ‘So we don’t have a chance!’”

“We may not have many natural resources,” Cedar observes, “but that is well compensated for by the human capital in Israel. This is something we should never take for granted.” ■

**Scientists in Israel, especially those in medicine, are driven by the desire to benefit humankind. This desire is derived from Jewish precepts, and is embodied in the culture.**



Campus Tour

# Celebrating 75 years of the Robert H. Smith Faculty of Agriculture, Food and Environment

Professor Alon Samach is cultivating a unique strain of passionfruit which has neuroprotective abilities. It protects against neuronal cell deaths, and in an animal model has shown promise for protection against Parkinson's disease in research conducted by Professor Oren Tirosh and Professor Aron Troen.



Entrance to the Faculty of Agriculture.  
Photographer: Schleissner. 1958

Two students work with Plantarray's sensors in the iCore Center for Functional Phenotyping of Whole-Plant Responses to Environmental Stresses. This new greenhouse is specially designed to enable researchers to screen hundreds of plants simultaneously, under a variety of controlled conditions (e.g., water availability, nutrient levels, specific chemicals, etc.). Soil-plant-atmosphere measurements of all plants take place in an easy-to-use, non-destructive and non-invasive manner, allowing for the genuine comparison of different plants and treatments. 2018



Researchers conduct experiments on the influence of salts on greenhouse plants. Photographer: Bernheim. Circa 1950s





Patricia Fresnillo Herrero, a postdoctoral student from Brugos, Spain, holds a passionfruit of the Dena strain created at the Hebrew University. 2018



Orchids grown in the tropical ornamental greenhouse. 2018



A student protects wheat plants on the experimental plot in the Faculty of Agriculture. 1955

View of Rehovot in the distance from the campus fields. 2018



Photographer for color photos: Miriam Alster Flash90.



The spokesman office of the judicial authority

# Beyond the Gavel: A Q & A with Justice Miriam Naor

Justice Miriam Naor, who recently retired as the President of the Supreme Court (2015-2017), served as a judge for 38 years, 14 of which were on the Supreme Court, and it all began at the Hebrew University Law School. We recently spoke with Justice Naor about the highlights and challenges of her career, the University's role in shaping the country and the legal establishment, and her future plans.

## What is the most important job of a law school?

Most importantly law schools must teach future lawyers how to think and how to behave in the courtroom. Naturally, law schools have the duty to teach different subjects, but there is a tendency to forget what is learned. What you don't forget, what you never forget, are ways of thinking. This is the main goal of the University.

It's also of vital importance that the University recruit the best students, regardless of background. If promising students come from challenging environments, financially or otherwise, or if they have to study and work at the same time, the University should offer financial assistance, on an equal basis. My father passed away when I was a student, and during this difficult time my professors found University resources to pay my tuition fees. This was crucial to my success as a student.

## What are your current plans now that you are officially retired from the Supreme Court?

I intend to write two books (after a long vacation). The first is a short one, a detective story for children. The other, which is far more serious, is about how judges conduct fact-finding. Do you recall the iconic three wise monkeys, where the first doesn't see, the second doesn't hear, and the third doesn't speak? They symbolize an aspect of human nature which becomes very apparent with witnesses. A judge must have a method for dealing with this in the courtroom. Witness testimony is by nature a partial account, and a judge has to decide what is and is not being said, withheld, or subjected to bias. The question is, how? As you can imagine it's very complicated. Most of the time in my career I was not at the Supreme Court. I was at the Magistrate Court and District Court, so fact finding is something I did for many years as a judge. It has always fascinated me but I never had the time to write about it.

## Is judicial fact-finding something you learn from experience or is it something that can be taught?

I was a lawyer for just seven years before I became a magistrate judge, at the age of 32. I was greatly influenced by my teacher, Justice Moshe Landau. He was the main influence and inspiration in my decision to become a judge. And just seven years after becoming a magistrate judge, I became Justice of the Peace. It was at that point in my career that I became fascinated with fact-finding as a subject, and began to think critically about the methods judges use for fact-finding. When a judge hears one witness, or many witnesses, how does that judge decide what actually happened? What is the framework, the methodology, that a judge ought to employ? As a young judge I asked myself these questions. And it's my lifelong reflections on these questions that I would like to impart through the book I'm going to write.

## When you first became a judge, was it common for a woman to hold such a position?

Not as common as it is today. Currently there are slightly more female judges than male. Especially in the lower courts, it's very common for women to be judges. When you have children, there are always challenges, as in any profession. My twin boys were just three years old when I was appointed judge of the Magistrate Court. I never missed one day. But I don't think the challenges I faced in my career were unique. Justice Miriam Ben-Porat, the first woman appointed to the Supreme Court — I consider



"Do you recall the iconic three wise monkeys, where the first doesn't see, the second doesn't hear, and the third doesn't speak? They symbolize an aspect of human nature which becomes very apparent with witnesses."

her to be outstanding. In her time, she was the only woman in the Supreme Court, and she really was a trailblazer.

## Looking back at your service in the Supreme Court, are there some cases that stand out?

Every case is important. If I say one case is more important than the others, it doesn't do justice to the others. A judge should understand that there is always a person or people behind each case — it's always about someone's life, people's lives.

## What is your advice to future lawyers?

My advice would be to treat every case as the only case in the world. Be polite, honest, friendly to other lawyers, and do a good job.

## What was your hardest case?

It's not one case, but I think adoption cases are the most difficult as a type of case because the decision is binary. You have to decide who will parent a child and who will not. It's a decision that will affect the child forever, and it permanently affects the biological parents or the adopting parents. These are the most emotionally difficult cases.

## In the next hundred years where do you hope the Hebrew University Law School will be? And the Israeli legal system?

Better... only better. Better and better! ■

A judge should understand that there is always a person or people behind each case.

# The Future of the Israeli Innovative Economy

by Eugene Kandel



Eugene Kandel is the Emil Speyer Professor of Economics and Finance at the Hebrew University. At the University, he founded the Center for Financial Markets and Institutions and the MA program in Finance and Financial Economics. He is the CEO of Start-Up Nation Central and previously served as the Head of the National Economic Council (NEC) and as the Economic Advisor to the Prime Minister of Israel.

The Innovative Sector is an engine that pulls all the other cars in the economy. We, at the National Economic Council, used this metaphor to convince the Israeli government to adopt an economic and social strategy, and established dedicated processes and institutions to support it, which we developed with several partners.

If I had to use the train metaphor today, I would draw a picture of two separate trains, on separate tracks, one much further ahead and moving much faster than the other. They would symbolize two different economies: the Innovative Economy and, for the lack of a better term, the Main Economy.

Many years of studying and helping shape the Israeli economy in various capacities has taught me that it was a mistake to look at the Israeli economy as a single unit. I believe that Israel, unlike other countries, or perhaps somewhat ahead of them, has become partitioned into two very different economies that are practically disconnected from each other.

The Innovative Economy employs almost nine percent of the workforce and produces close to 15 percent of its GDP (both are much higher than in any other country), while pushing the frontiers of technology worldwide. People running innovative companies and working in them think and operate differently from the rest, and their firms are run, structured, and financed very differently than most firms in the Main Economy. They feel at home anywhere in the world. They are happy to take chances and welcome challenges. If they fail, they get up and start something new, and if they

succeed, their productivity level rises. They are very supportive of each other, while at the same time highly competitive. They do not expect favors from the government.

The most important feature of the Innovative Economy is that we fiercely compete for these companies and people with the rest of the world. Many foreign firms and governments are willing and ready to pay significant amounts to attract them. Even without this inducement, many Israeli firms and their investors choose to move operations overseas, so as to be closer to their key markets and sources of financing. There is some understanding

of this in the government, so the Innovative Economy is less regulated and less taxed, but even this understanding is starting to lose its consensus in politics. This economy used to grow very rapidly, yet in the last couple of years — while financing is still growing — its share of employment has started to shrink.

The Main Economy (basically, everyone else) is much more local, much less productive, and much more risk averse. In many respects this economy depends on the government to support it or bail it out. Perhaps as a result it is excessively regulated, unionized, and more heavily taxed. The feeling is that



“If I had to use the train metaphor today, I would draw a picture of two separate trains, on separate tracks; one much further ahead and moving much faster than the other.”

it will stay in Israel, as few outsiders compete for it. The question is whether it will become more efficient, providing higher wages for its employees and reducing the cost of living in the country, or continue in the current bad equilibrium with lower wages and higher cost of living.

These two economies require completely different inputs and environments, including human capital, labor relations, financing, knowledge, regulation of all types, and taxation. While some rules do differentiate between the two, most of the time the government uses a “one size fits all” approach, which does not work for either. We can no longer assume that the Innovative Economy can pull all the other cars in the economy toward a better future. Instead we need to think about how to attach more cars to the innovation train, enabling more people to board it. At the same time, we need to aggressively pursue an increase in the productivity of the Main Economy sector. Together

## Many Israelis feel that our genius has cornered the world innovation market, and Israel will remain the global tech leader indefinitely. But they are wrong.

with our complicated geopolitics, these are the two central challenges Israel faces, and to succeed we need to treat these two economies separately.

Let me focus on the first challenge, which occupies me these days.

The Innovative Economy performs very well in a wide number of measures and is admired worldwide. Many Israelis feel that our genius has cornered the world innovation market, and Israel will remain the global tech leader indefinitely. But they are wrong.

Israel’s success in creating a functioning, growing, and sustainable innovation ecosystem has spawned a lot of competition all over the world. As a result, while our ecosystem grows in absolute terms, as competition intensifies and much bigger countries join the race, our relative size is declining and will continue to do so, unless we have a strategy

to maintain our leadership position. Such a strategy has to be developed in a coordinated effort between academia, industry, and the government.

Due to intensifying competition, the Innovative Economy has two choices — to rapidly grow or to rapidly shrink. If it grows fast, it can keep its place as one of the main hubs of innovation around the world, even in the face of growing competition. If it grows slowly for a while, it will soon become yesterday’s news, and its admirers among large corporations and investors will look for new hubs to procure solutions. This will bring about a rapid unravelling of the Innovative Economy, as companies and workers will be forced to leave, following their investors and clients. Such development will severely weaken Israel’s economy and its security. Thus, it must be our national priority to prevent it.

The main threats to rapid growth come from three sources: a lack of innovation, a lack of human capital, and non-supportive business environments. Israel has always had very strong universities and research centers. However, it has not kept pace with the worldwide increase of academic research funding, which jeopardizes its future ability for innovation in relevant areas. Israel also experiences a serious shortage in tech professionals. This shortage has been recognized, and steps are currently underway to remedy the situation, but we have a long way to go. Finally, even though the Innovative Economy is less regulated and taxed, it, along with the rest of the economy, suffers from a lack of regulatory predictability and stability. In some cases, even policies and regulations that are not aimed at it adversely affect the innovation ecosystem.

Israel has developed a great asset that requires constant nurturing and support to flourish and make Israel secure and truly a “the light onto the nations.” I am proud to lead a unique non-profit, Start-Up Nation Central, dedicated to strengthening and promoting Israeli innovation, and connecting this sector of our economy to the world, while helping it remain in Israel. We work in close collaboration with the government and the industry as well as many dedicated individuals, helping to make this dream come true. ■



Photo by Adam Jang

# Our Second Century

by **Yaron Daniely**, PhD, MBA  
President & CEO, Yisum



As we turn the page on our first one hundred pioneering, miraculous years of the Hebrew University, we begin charting the chronicles of our second century. Tempting as it may be, reminiscing about all that has been achieved so far must not distract us from planning for the challenges and opportunities that lie ahead. Our preparedness for the drastic transformations occurring globally in education and innovation will decide the fate of our University.

For most of the past one hundred years, universities were the preeminent and irreplaceable source of novel inventions. Industry huddled at their institutional gates as it sought to source solutions and develop products for their customers. The emergence of the internet in the early 1990s dramatically impacted the role of universities and stripped them of their exclusivity in generating innovations and skilled entrepreneurs. This technological revolution displaced the historic role of academic research institutions and we are still coping with its repercussions.

In particular, this paradigm shift impacted university Technology Transfer Organizations (TTOs) across the world. Many such organizations

had perfected a consistent methodology of innovation patenting and intellectual property licensing as their core activities. For some, this model provided an adequate, if sometimes unpredictable, stream of income. However, numerous surveys suggest that the overwhelming majority of TTOs have not been successful in generating adequate returns over the past decade to cover their operational expenses. As the rate of royalty-bearing licenses remains flat at approximately 0.5 percent (i.e., only one in 200 licensing transactions will generate \$1M or more in royalty payments annually), TTOs are facing the insurmountable task of completing over 600 licensing deals to achieve that one, \$1M-bearing royalty paying license. The numbers are staggering, given that 600 completed licenses will mean an additional 1,200 technologies that the TTO will record, protect, and promote without attracting a partner. Note that the average rate of technology licensing is 30 percent at westernized academic and research institutions.

TTOs have typically dealt with this change in one of three ways. Many went on the defensive, clutching their intellectual property assets ever more tightly and elevating the barriers to their com-

mercialization, hoping to make better financial transactions with a more lucrative upside in case of success. This approach is likely to keep more university-based technologies on campus, and away from opportunities that can translate them into commercially-viable products. It is also fraught with the danger of alienating faculty members and students who pursue translational research through collaboration and dissemination.

The second way to handle the challenge is to try and improve the odds; if a TTO is able to commercialize more than just 30 percent of its inventions, or if it is able to improve upon the 0.5 percent success rate of royalty-bearing licenses, the numbers will shift to the TTO's benefit. The challenge in this method is in its implementation. TTOs focused on increasing odds generally invest in becoming better "fortune tellers," operating under the assumption that the TTO has unique capabilities to identify what inventions are more likely to attract partners, and which partners are more likely to drive long-term success. But by focusing on TTO expertise and internal know-how, these TTOs jeopardize two critical missions. First, they are likely to generate disengagement from faculty members who view their innovations as potentially important to the community, even in the absence of commercial value. Second, they may be wrong; they may neglect useful innovations and focus instead on others. In this respect, they will be in excellent company, joining the President of Western Union who passed on the opportunity to commercialize the telephone, and even our revered Einstein who did not believe in the future of nuclear energy. But they will be wrong nonetheless.

The third, advisable way to respond to these tectonic shifts in the TTOs ecosystem is to open, rather than narrow, our efforts. TTOs deciding to lower the barriers to commercialization will put more technologies in the hands of entrepreneurs and corporations, become transparent, and invite collaboration. These are the TTOs that will endure and prosper, while serving their original missions: to provide opportunities for academic innovation that translate into beneficial products and solutions, to be mindful of the needs of the community, and to respond to those needs with science, technology, and innovation.

At Yisum, this third approach of opening up our efforts means many things. It means realizing that our greatest assets are our faculty and students, and that patent protection is one of many ways, but not the only way, to define an asset. It means creating multiple, flexible channels that allow entrepreneurs to find the best conduit to support their technology. It means a continuous, thoughtful mapping of what our University has to offer, as well as the construction of a dynamic interface that allows commercial partners to find resources within the University. To be open means to ensure that our contracts and procedures are fair and represent the best practices for all participants, and it means leveraging our University resources to tackle the most complex and critical problems. Above all, however, to be an open TTO is to create value through collaboration with our colleagues within and outside the university.

The innovations of the past century have made our world smaller. Today, collectively and individually, we make decisions that will define our place in tomorrow's world, impacting our children and grandchildren. At Yisum, we strive to ensure that the innovations of tomorrow will improve the world for all of humankind. ■

**Reminiscing about all that has been achieved so far must not distract us from planning for the challenges and opportunities that lie ahead.**

# WORLD OF FRIENDS

## American Friends:

As American Friends, we are proud of the role HU played during the creation of the State and we are honored to help continue the legacy that started with the efforts of HU's illustrious founders.

We believe that human ingenuity makes everything possible and we know that the Hebrew University encourages, enables, and sustains the search for knowledge in very special and unique ways. Our supporters appreciate the advantages of funding research in the "start-up nation," where innovators are known for accomplishing more with less as compared to their peers at US institutions.

Hebrew University students are not only well educated: they are global citizens who view Israel as a powerhouse nation, and who also see themselves in the context of the international community. HU touches upon every aspect of life globally and is an invaluable resource to the world.

Marc Mayer, President, AFHU

## Bel Air Affaire

The Humanitarian Torch of Learning Award was conferred upon dedicated civic and Jewish communal leaders, Renae Jacobs-Anson and Helen Jacobs-Lepor, at the elegant Bel Air Affaire in Los Angeles. Since its launch nine years ago, the Bel Air Affaire has generated more than \$7 million in support of HU student scholarships.

From left: Richard Ziman, Renae Jacobs-Anson, Brindell Gottlieb, Helen Jacobs-Lepor, President Asher Cohen, Patricia Glaser, Marc Mayer, and Mark Vidergauz



## Torch of Learning

Gerald E. Rosen, former US District Chief Judge of the Eastern District of Michigan, received the Torch of Learning Award in Detroit. In addition to his longstanding career on the bench, Judge Rosen has been a lecturer at Hebrew University's Faculty of Law and other institutions. President, Professor Asher Cohen, attended the event, which was emceed by Chuck Stokes, of WXYZ-TV in Detroit.

From left: President Asher Cohen, Judge Rosen, and Chuck Stokes



## NEXUS:ISRAEL

Leading finance, investment, and business professionals gathered with innovators, Nobel Laureates, and entrepreneurs to participate in NEXUS:ISRAEL, an interactive innovation conference held in New York City. Presentations showcased Israeli-led innovations, and Hebrew University experts mapped their routes from the laboratory to the market.

From left: Clive Kabatnik and Roger Kornberg



## George A. Katz Torch of Learning Award

Prominent attorneys David B. Pitofsky and Lawrence J. Zweifach were honored at the 47th George A. Katz Torch of Learning Award luncheon in New York. Professor Michael Karayanni, Dean of Hebrew University's Faculty of Law, was a special guest, and the award-winning investigative journalist, Brian Ross, provided keynote remarks.

From left: Kenneth Stein, John Siffert, David Pitofsky, Lawrence Zweifach, Ira Lee Sorkin, and Professor Michael Karayanni



## Palm Beach Dinner

Palm Beach Scopus Award Gala, An Evening in Ancient Jerusalem, recognized the completion of the Palm Beach Courtyard at the Edmond and Lily Safra Center for Brain Sciences, and launched the Palm Beach Memory and Cognitive Research Fund at ELSC. Event chairs were Marjorie and Robert Emden, Sherry and Kenneth Endelson, and Andrea and John Stark; dinner chairs included Roberta and Stanley Bogen. Special guest Michael Bolton provided a musical performance.

From left: Robert and Marjorie Emden, Michael Bolton, Roberta and Stanley Bogen





## Canadian Friends:

The University remains as vital and innovative today as it did a century ago. Every day brings news of yet another breakthrough from Hebrew University scholars, scientists, and researchers. In Israel and internationally, the Hebrew University excels, and the world notices.

The Hebrew University, with the help of all the Friends organizations, will continue to respond to globalization, introducing new models of higher education. The University will lead in demonstrating meaningful growth for the world by leveraging its assets, deepening its relationships, tapping into uncontested markets, and attracting new waves of donors, foundations, and joint ventures while building stronger relationships with Jerusalem, Israel, and the people of the world.

Monette Malewski, President, CFHU



CFHU continues to build on its Israel-Canadian partnerships with the new collaboration between The Rick Hansen Institute and Hebrew University's Alexander Grass Center for Bioengineering. Launched in Vancouver, the collaboration is to accelerate medical innovation and improve the lives of people with spinal cord injury.

From left: Bernard Bressler, Director of the Board, Canada-Israel Industrial Research & Development Foundation; Bill Barrable, CEO, Rick Hansen Institute; Prof. Yaakov Nahmias, Director of the Grass Center for Bioengineering at the Hebrew University; the Honourable Jody Wilson-Raybould, Minister of Justice and Attorney General of Canada; Jonathan Miodowski, Manager, Commercialization and Industry Relations, Rick Hansen Institute; CFHU Western Region Executive Director Dina Wachtel; the Honourable Bruce Ralston, B.C. Minister of Jobs, Trade and Technology; and Rick Glumac, Parliamentary Secretary for Technology



To honor the spirit and legacy of Hebrew University Founder Albert Einstein, visionaries, dreamers, and geniuses gathered in Montreal for an extraordinary weekend, Celebrating a Century of Genius. Visionaries spoke about their work, passions, and inspirations during the weekend. The highlight of the weekend was the Celebrating a Century of Genius Gala Dinner that unveiled the world's first 3D printed book — Genius: 100 Visions of the Future — in the likeness of Albert Einstein, filled with pages dedicated to a single visionary's hopes for the future.

From left: Astronaut Soichi Noguchi, honorary Co-Chair of the Genius 100 Visions project; CFHU National Chair and Celebrating a Century of Genius weekend Co-Chair Monette Malewski; artist and industrial designer Ron Arad, who designed the 3D book; CFHU immediate past National Chair Murray Palay; and CFHU President & CEO Rami Kleinmann



From left: Robert Simons OAM with Hebrew University Vice President, Ambassador Yossi Gal

## South African Friends:

The Hebrew University is one of the most inspirational organizations in the world. The innovative research that the University produces is truly remarkable and is having a profound effect on all aspects of human existence. It is amazing to observe the life-changing effect one institution can have for so many.

Professor Michael Katz, President, South African Friends



From left: Julian Beare, Carmel Krawitz, Philip Jacobson, Professor Michael Katz, Board of Governors Chair, Michael Federmann, Hebrew University Chancellor Professor Menahem Ben-Sasson, Paul Berman, and Hebrew University Vice President, Amb. Yossi Gal

## Australian Friends:

The future is bright for the University and we are excited to see the outcomes of the ground-breaking research being conducted. It may well be that the University will be instrumental in finding the cures for so many diseases, such as neurodegenerative diseases and cancer. It will create technologies that help to feed and provide water for the world's population and help the disabled live fuller, healthier lives. We know that the smartest and most creative products that will make our world a safer place will have been created at the University.

Michael Dunkel, President, Australian Friends

## British Friends:

What's most exciting is the University's continuous ability to innovate and bring benefit to the world despite adversity and challenges all around - as well as the humble and committed nature of its students, researchers, and faculty.

Isaac Kaye, Chairman, BFHU

BFHU young professionals at the annual Legal Group dinner and the Henry Cohen Lecture



From Left: Sir Trevor Pears, and Dr. Rilwan Raji from Nigeria, Pears Masters Scholar, graduate IMPH — in London to help showcase the Hebrew University International Masters programs

## European Friends:

Our European Council was built on the fruitful and longstanding spirit of friendship and unique bonds that exist between individual Hebrew University Associations in Europe and their cross-border relationships. Through our shared vision and joint strategies, it is our pleasure to advance and strengthen common aims and goals of supporting the incredible work of the Hebrew University.

### European Council of Presidents:

Marcel Landesmann, President, Austrian Friends  
Antoinette Grosman, President, Belgium Friends  
Michèle Anahory, President, French Friends  
Jean-Claude Picard, President, French Friends  
Professor Dr. h.c. Günter Stock,  
President German Friends  
Maria Modena, President Italian Friends  
Viviana Kasam, President, Brain Circle Italia  
Alain Meyer, President, Luxembourg Friends  
Harry Jacob van den Bergh, President, Dutch Friends  
José Carp, President, Portuguese Friends  
Peter Goldman, President, Swedish Friends  
Gültin S. Ephrati, President, Swiss Friends (Geneva)  
Nadia Guth Biasini, President, Swiss Friends (Zurich)  
Muriel Salem, President, Brain Circle UK

### Scopus Gala in Paris

UHJ-France was proud to grant this year's Scopus Award to the renowned Michelin-starred chef, Thierry Marx, during their gala with their new president Michèle Anahory.

From left: President Asher Cohen, Michèle Anahory, and Thierry Marx



### Brain Forum in Brussels

More than 160 people attended the Brain Forum organized by the Belgian Friends at the Royal Academy of Medicine in Brussels. On the theme of childhood learning disorders, Belgian and Israeli teachers took the floor to discuss the state of progress of their research. Under the chairmanship of Prof. Jacques Brotchi and Prof. Julien Mendlewicz, guests were able to listen to Professor Merav Ahissar.

From left: Antoinette Grosman, President of the Belgian Friends, Jean-Charles De Keyser, moderator of the Brain Forum 2017, Professor Jacques Brotchi, President of the Brain Forum 2017, and Rachel Brotchi



### Conference in Berlin

“Artificial Intelligence - what's next? An outlook with Professor Naftali Tishby of Hebrew University.”

From left: Sofie Quidenus-Wahlforss, CEO SearchInk, Maru Winnacker, Co-Host, CEO Noona Ventures, and Zoé Fabian, Head of Investments, OVG Real Estate

### Conference in Geneva

“Bitcoin is dead... Long live crypto-currencies” was the talk given by Michael D. Huttman from Millennium Global Investments Ltd, Founder and Chairman, London. The event was attended by over 200 people, and was organized by the Swiss Friends with the generous support of Ness Family Office.

## Israeli Friends:

The academic excellence and international recognition of the Hebrew University is a dream come true for the founders of the Hebrew University and the Zionist movement. We are proud of the incredible achievements made by generations of Israeli students and scholars who made it all possible in spite of national and personal security and economic hardships. We are proud of all those who contributed to the establishment of this high profile, multifaceted, innovative research and education trailblazer, a true pillar in advancing the State of Israel, Israeli society, and our economy.

Dr. Shlomit Shulov Barkan, Director, Israeli Friends and Alumni Association



Daniella Mochrik initiated the donation to establish the Adam Center for Sports Medicine and Health Promotion in honor of her parents, Irena and Michael, who cherished higher education and their country. Irena, z"l was a pioneer in the field of sports education in Israel and taught generations of young gymnasts. Her daughter, Daniella followed in her path and taught physical education. Together with the management of the Hebrew University, the cornerstones of the project were laid in 2014 and in October 2017, the Center was inaugurated. Daniella was awarded a Hebrew University Honorary Fellowship and honored with an inscription on the Wall of Benefactors.

## Friends from Latin America:

### Brazil:

The University is ahead of its time and empowers us to improve ourselves. It's a tool that enables us to connect with more people in Israel and with many other countries. Brazil and Israel are partners and can complement each other in so many fields. The University allows us to be part of this history, and it is a great honor.

Jayne Blay, President, Brazilian Friends

From left: Fanny Sonabend, Professor Ruth Fine, Roberto Sonabend, President of the Mexican Friends of the Hebrew University, and Carmen Robledo Lopez



### Argentina:

What is most exciting is to see how Jewish, Muslim and Christian students are integrated into the campus, honoring the fourteen fundamental stones that gave rise to its foundation.

Eng. Hector Sussman, President, Argentinian Friends

### Peru:

It is a center of studies founded prior to the creation of the State of Israel by great personalities recognized worldwide. It is an historical and cultural jewel.

Oscar Vexelman, President, Peruvian Friends

### Mexico:

The University is a beacon of knowledge and achievement between scholars from all origins. It offers us an example of how collaboration is the best way to build a better future. The technological advancements coming out of the University create a more just and meaningful way of life. We predict that the Hebrew University will announce cures for diseases and solutions for a sustainable planet.

Roberto Sonabend, President, Mexican Friends

### Uruguay:

Collaborating from our small country with an institution created by such brilliant minds as Einstein, Weizmann, Buber, and Freud, among others, makes us feel a great pride in the vision of these people, who found light at the end of the tunnel of anti-Semitism in Europe. We have full confidence that diseases such as cancer, Alzheimer's, and Parkinson's disease will be able to find adequate answers thanks to the excellence of the Hebrew University and the constant search for answers to questions, even those not yet formulated.

Dr. Gabriel Goldman, President, Uruguayan Friends



From left: Daniel Wildbaum, Juan Birnbaum, Gabriel Goldman, President of the Uruguayan Friends of the Hebrew University, Teresa Porzecanski, Professor Zohar Kerem, and Ana Chadicov y Marcos Israel

## Save the Date

### Highlights of Events Around the World (2018-2019)

#### 2018

June 28, Vancouver: Canadian Friends Honoring Dr. Saul Isserow, A Journey from South Africa to Canada

August 1, Toronto: Canadian Friends Ruth Farb Charity Golf Classic

September 9, Geneva, Switzerland: Scopus Gala with le Rosey - President Asher Cohen, Prof. Idan Segev

September 15, Bel Air, CA: The Bel Air Affaire 2018: Student Scholarship Fundraising Event Honoring Hella and Charles Hershon, Gottlieb Residence "The Milton"

Fall, Jerusalem: I. and B. Newman Prize for Hebrew Literature ceremony hosted by Israeli Friends

October 15, Paris, France: Scopus Gala honoring Carlos Ghosn

October 17-24, Jerusalem: British Friends Annual Legacy Mission

October 21-November 6: Canadian Friends' Live! Learn! Explore! Italy & Israel: Sicily, Jerusalem, and Tel Aviv

November 9, Brussels, Belgium: Scopus Gala honoring European Deputy Frédérique Ries

November 13, Israel: European Friends Young Mission to Jerusalem

November 18, Paris, France: AFIRNE Brain Forum - Conference on Brain and Food Imagine

November, Jerusalem: Israeli Friends Spotlight Event on the Faculty of Law

December, London: British Friends Centenary Gala Dinner

#### 2019

January: Punta del Este, Argentina Friends' and Uruguayan Friends' Summer Symposium

January 19, Palm Beach: Palm Beach Scopus Award Gala

January 20, Palm Beach: Palm Beach Annual Leadership Education Forum (ALEF)

March 3-8, Israel: Walk Israel with Canadian Friends

March 15-18, London: The 11th Brain Circle UK Meeting

March 18, London: British Brain Circle UK Gala

March, London: British Friends 65th annual Lionel Cohen Legal Group dinner

May, London: NEXUS London

## Ask the Expert:

# 3D Printing the Future

Professor Oded Shoseyov, Protein Engineering and Nano-Biotechnology, The Robert H. Smith Institute of Plant Science and Genetics and the Harvey M. Krueger Family Center for Nanoscience and Nanotechnology, The Robert H. Smith Faculty of Agriculture, Food and Environment, the Hebrew University of Jerusalem.

In the near future, Hebrew University Professor Oded Shoseyov envisions a world where science outpaces science fiction. He has modified Eucalyptus trees to make them grow faster, developed methods for 3D printing of human organs, and is patenting sneaker insoles mimicking the jumping pads of fleas that would allow humans to jump higher. As he sees it, we are on the verge of a new era which is, as it turns out, quite possibly beyond imagination.



### What inspires your research?

What drives me and inspires me is nature. I look at how things are made, and nature makes things better and more efficiently than what we as humans are able to do. I try to mimic that. I'm always looking for that next step that leads to a quantum leap in biotechnological innovation.

### What are you working on now?

We developed the technology to clone human genes and grow them on tobacco plants, which allows for the harvesting of human collagen in a purified state that is identical to the natural collagen found in our body. This plant-sourced collagen is harvested and purified and used as the structure for many applications — from 3D printed human organs such as lungs and corneas, to a collagen gel that promotes wound healing and repairs soft and hard tissues. We recently further developed the technology to produce in plants human antibodies (biological drugs) that target diseases such as cancer, Crohn's disease, and rheumatoid arthritis. Because we use plants as the manufacturer and purifier for these

products instead of vastly expensive bioreactors, these products become much more affordable and available.

### Will biological technology push us into a new era?

The stone age ended not for a lack of stones, but simply because it was replaced by something better; synthetic materials produced from oil were superior. And the oil age will end long before we run out of oil or gas simply because biomaterials are superior. I think we are on the verge of the plant age.

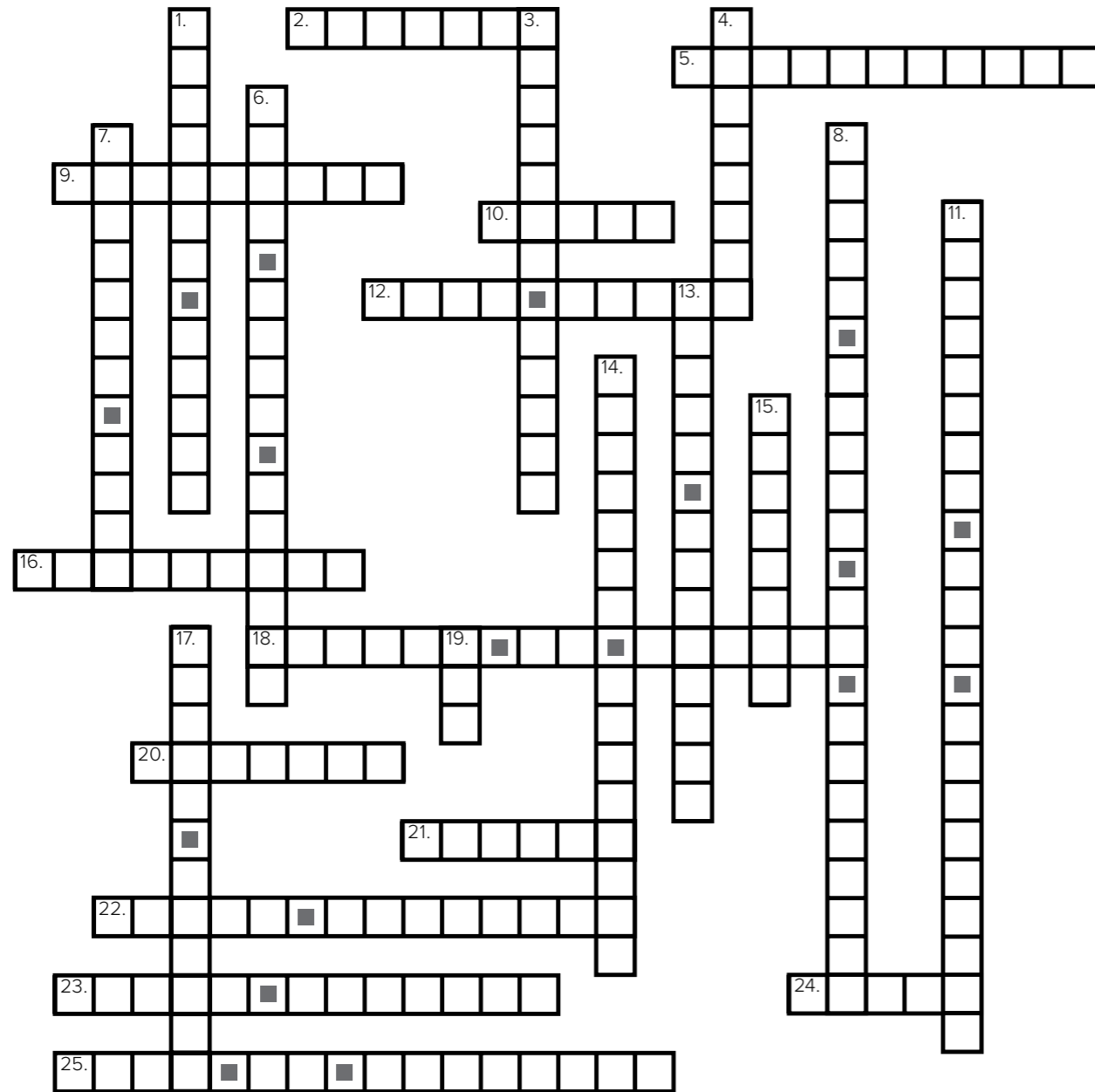
### What's an example of how biomaterials will look in the future?

Simply entering the plant age will not be the quantum leap. What we are doing now is just an intermediate stage. Biological systems are the future. The quantum leap will be the day when you and I will ride in a car that will perform photosynthesis to harvest its energy and will be made of tissues and organs. Instead of wheels, it will have "horse legs!" ■



# A Cornerstone Crossword:

## Test your knowledge



### WORD BANK:

- |             |                  |                  |                        |                  |
|-------------|------------------|------------------|------------------------|------------------|
| Library     | Tribes Of Israel | Eilat            | Gray Hill Estate       | Zionist Movement |
| Cornerstone | Talpiot          | Jews Of Diaspora | Seventy-Five           | Watchman         |
| Jerusalem   | Yissum           | Sigmund Freud    | Mufti Kamel El Hussein | Judah Magnes     |
| Beit Dagan  | Chaim Weizmann   | Yechiel Segal    | Teachers And Novelists | Six              |
| Chemistry   | Frank Sinatra    | Fourteen         | Asher Ginsberg         | Seven            |



### ACROSS:

2. University's first what was established in 1892?
5. Permission granted in 1889 to lay the first what?
9. Second cornerstone commemorated
10. Number of Nobel prizes won by alumni and faculty
12. Only veterinary school in the Middle East located in this city
16. Three institutes opened in 1925; Jewish Studies, Mathematics, and \_\_\_\_\_
18. Original cornerstones symbolized these
20. Original proposed location for the University
21. Name of University's Tech Transfer Company
22. Who laid the first cornerstone?
23. This famous blue-eyed singer gave a concert to raise money for the University
24. Hebrew University Interuniversity Institute for Marine Sciences established in this city
25. Fourteenth cornerstone commemorated

### DOWN:

1. Psychotherapist who was a member of first Board of Governors
3. Who planned the gardens of the University?
4. Actual number of cornerstones
6. First structure on Mount Scopus before the University
7. Rehovot campus celebrating which anniversary in 2018?
8. Thirteenth cornerstone commemorated
11. Ninth cornerstone commemorated
13. Philosopher who proposed Hebrew as the official language of the University
14. First cornerstone commemorated
15. Meaning of "scopus"
17. University's first Chancellor
19. Number of Hebrew University campuses

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