AUSTFHU

HEBREW UNIVERSITY – THE INNOVATIVE WAY

Australian Friends of the Hebrew University of Jerusalem Newsletter **Issue 68 Winter 2019**

MOBILEYE FOUNDER'S TEAM AT HEBREW UNIVERSITY FOUND THE WAY

Under the direction of Mobileye founder Amnon Shashua, a research group at Hebrew University of Jerusalem's School of Engineering and Computer Science has proven that artificial intelligence (AI) can help us understand the world on an infinitesimally small scale called quantum physics phenomena.

Quantum physics phenomena is one of the hottest topics in contemporary physics. It looks at how particles in nature "come together" and bring along their unique properties, such as electrical conductivity or magnetism. However, it has been almost impossible for even the most seasoned researchers to get more than a glimpse of these complex phenomena. This is because of the enormous number of particles these phenomena contain (over one billion billions in each gram) and the enormous number of interactions between them. Until now.

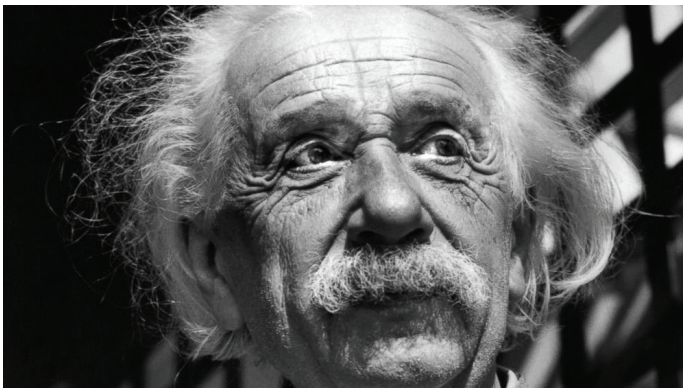
A new study published in Physical Review Letters by Prof. Shashua's computer science doctoral students at Hebrew University -- Yoav Levin, Or Sharir and Nadav Cohen -- has demonstrated mathematically that algorithms based on deep neural networks can be applied to better understand the world of quantum physics, as well.

These algorithms, the very same ones that gave our computers facial- and voice-recognition capabilities, can now be harnessed to enhance our understanding of the quantum behavior of nature. As lead author Shashua shared, "what we have here is nothing short of extraordinary: a leading physics journal publishing computer science research. This cross-pollination has created a new and important tool that will help us understand the quantum nature of the world around us."

Like the technological revolutions of the 20th century, gaining a deeper understanding of quantum physics through artificial intelligence has the potential to revolutionize all aspects of our lives, from computing and energy to transportation.

Hebrew University professor and Mobileye founder Amnon Shashua. (Photo: Hebrew University)

HEBREW UNIVERSITY ADDS NEW MANUSCRIPTS TO EINSTEIN ARCHIVE



This June 1954 file photo, shows physicist Albert Einstein in Princeton, N.J. (Photo: The Associated Press - File)

Israel's Hebrew University announced that it had obtained a "magnificent" collection of Albert Einstein's manuscripts including computations and letters, shedding new light on the mind and soul of the Nobel Prize-winning physicist ahead of his 140th birthday.

The bulk of the 110-page collection consists of yellowed pages of handwritten equations, as well as several personal letters written in German. In one correspondence with his lifelong friend Michele Besso, Einstein said he felt "ashamed" for never bothering to learn Hebrew.

Professor Hanoch Gutfreund, the Einstein archive's academic director, said: "For historians of science, it is very important to have manuscripts, because then one sees that he crossed out something that he changed something, and it is interesting to see how he actually worked."

Each of the four personal letters from Einstein "is a gem," Gutfreund added.

"In every letter exchanged between them, they refer to something scientific. But they always share something personal about their families," said Gutfreund. "And they also very often exchange remarks about their Jewish identity."

Besso, a Swiss-Italian engineer of Jewish descent, was baptized a Christian but also learned the Hebrew language. In one of their letters, Einstein wrote with a touch of sarcasm that he "as a 'Jewish saint' must feel ashamed at the fact that I know next to nothing of it. But I prefer to feel ashamed rather than to learn it."

"You will certainly not go to hell, even if you have had yourself baptized," Einstein wrote.

In the same letter from 1951, Einstein tells Besso that he has "still not come closer" to fully comprehending the nature of light particles after nearly 50 years of research.

The esteemed physicist had left Germany years earlier amid the rise of fascism. In a 1935 letter to his son Hans Albert, he expressed dismay that other European powers had not done more to curb Nazis' military buildup.

"The German armament must be extremely dangerous; but the rest of Europe is now starting to finally take the thing serious, especially the English," Einstein wrote. "If they would have come down hard a year and a half ago, it would have been better and easier."

The Chicago-based Crown-Goodman Family Foundation purchased the 110 pages, most of which have never been

publicly displayed, from a private collector in Chapel Hill, North Carolina, and donated them to Hebrew University.

The university did not state the purchase price, citing the donor's wishes.

A different signed Einstein letter to Besso sold at auction in 2017 for $68,000.

These newly acquired documents had belonged to Ernst Straus, Einstein's one-time assistant and fellow mathematician. They were sold by Straus's family after his death in 1983 to a New York antique dealer. Eventually the documents made their way to the collection of Gary Berger, a Chapel Hill doctor.

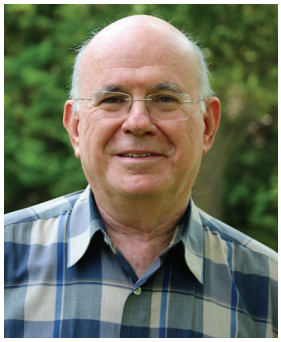
Roni Grosz, curator of the Albert Einstein Archive at Hebrew University in Jerusalem, called the documents "a rare find." Though the contents of many of the documents were already known to researchers, "originals are a very, very special addition to a collection," he said.

Einstein helped establish Hebrew University and was a member of its board of directors. After his death in 1955, he left most of his archive — over 82,000 items, ranging from manuscripts to his music records — to the school.

Awarded the Nobel Prize in Physics in 1921 for his work on the photoelectric effect, Einstein is perhaps more famous for his General Theory of Relativity.

SESAME: SCIENTIFIC PROGRESS AND DIPLOMACY

Particle theorist Eliezer Rabinovici, Professor of Particle Physics at The Hebrew University of Jerusalem is among five scientists worldwide who've been awarded the 2019 Award for Science Diplomacy from the American Association for the Advancement of Science (AAAS) for his outstanding scientific and diplomatic contributions to SESAME (Synchrotron-light Experimental Science and Applications in the Middle East), founded in Jordan in 2017.



Eliezer Rabinovici

Rabinovici played a crucial role in the founding and, now, guiding of SESAME's laboratory, the first such research centre in the area. With partners from Cyprus, Egypt, Iran, Israel, Jordan, Pakistan, the Palestinian Authority and Turkey, SESAME has established an unprecedented level of cooperation between scientists from the Middle East, typically an area of conflict. Despite political and practical obstacles

SESAME International Research Centre

that sometimes threaten SESAME's work, its dedicated members propel their mission forward.

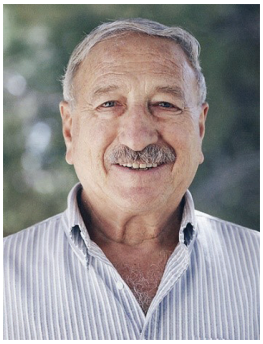
Rabinovici provides scientific and diplomatic guidance for the group whose focus is a synchrotron light beam, valuable across many scientific disciplines due to its ability to uncover key structural components at the atomic level. Innovations in scientific fields as unrelated as archaeology and medicine will be beneficiaries of this strategic light.

"In recent years, there is hardly a more shining example of science diplomacy than SESAME, which demonstrates the power of science to build bridges in the face of geopolitical tensions," said Mahlet Mesfin, deputy director of the AAAS Center for Science Diplomacy.

PROFESSOR AMNON BEN TOR, HU ARCHAEOLGY PROFESSOR TO RECEIVE ISRAELI PRIZE IN ARCHEOLOGY

Education Minister Naftali Bennett announced that the 2019 Israel Prize in the field of archaeology will be awarded to Professor Amnon Ben Tor of the Institute of Archaeology at the Hebrew University of Jerusalem.

Born in 1935, Ben Tor is a noted scholar with five decades of work to his credit. He excavated extensively in Tel Hazor and is famous for taking a middle path in the long standing dilemma surrounding the scientific validity of the Bible.


Amnon Ben Tor

Some biblical scholars, such as Israel Finkelstein, lean in the direction of viewing the unified Kingdom of David as a political narrative composed in hindsight.

Others, like the late Adam Zertal, argue for total certainty that we now know where the site of the altar of Joshua is.

Ben Tor thinks that both the unified Kingdom of David and the conquest of the land of Israel are likely true.

However, he does reason that the biblical narrative is shaped by theology and should not be taken at face value without strict archaeological work to compare the text with.

The prize committee included in its recommendation that thanks to his work, Tel Hazor is now a national park with extensive archaeological value accessible to the general public.

The Jerusalem Post by Hagay Hacohen / March 28, 2019


Aerial view of Tel Hazor

SOMETHING IN THE AIR: SERIOUS UNDERESTIMATION OF GLOBAL WARMING

EMET Prize-winning scientist, Professor Daniel Rosenfeld, of Hebrew University of Jerusalem's Herrmann Institute of Earth Sciences, has developed a satellite imaging method which has determined that the extent of global warming has been grossly underestimated.

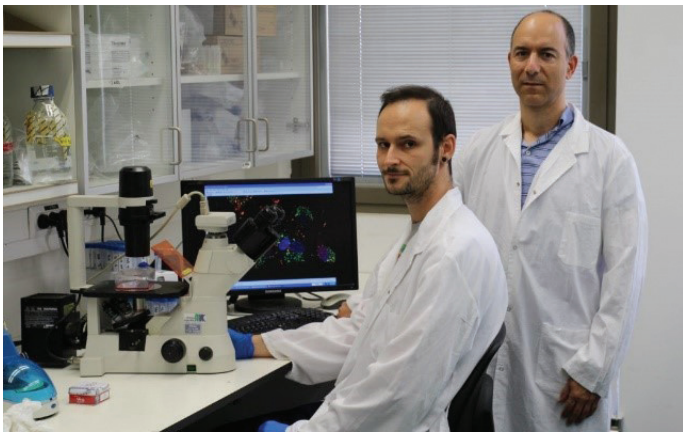
Until recently, science was unable to quantify manmade responsibility for climate change, including that of aerosols and their effect on clouds. The new method "enables us to quantify climate effects on a global scope, provides a more accurate assessment of the processes affecting global warming, and reduces the uncertainty there is about climate change," remarked Rosenfeld. With his colleagues, Professor Meinrat O. Andreae from the Max Planck Institute of Chemistry in Mainz, Germany, Professor Zhanqing Li from the University of Maryland, Professor Paulo Artaxo from the University of Sao Paulo, and Yannian Zhu from the Meteorological Institute of Shaanxi Province in China, they discovered a new way to determine both cloud-base updraft speeds and quantify aerosol particles' ability to create cloud droplets. Their new method used measurements from an existing meteorological satellite rather than conventional aircraft and ground stations.

Because current best predictions of global climate change have not had the advantage of this more accurate new satellite-imaging method of measurement, Rosenfeld believes that using this new methodology "will lead to more informed decisions with respect to the actions needed to counter global warming."


Measurements of cloud condensation nuclei collected at the Amazon Tall Tower Observatory in the middle of the Amazon Basin. (Photo: Meinrat O. Andreae)

ISRAELIS DISCOVER PROMISING TREATMENT FOR AGGRESSIVE BRAIN TUMOURS

Hebrew University researchers share results of a new glioblastoma treatment with the potential to improve and extend patients' lives.



Hebrew University PhD student Maxim Mogilevsky and Prof. Rotem Karni in the Institute for Medical Research-Israel Canada lab. (Photo: Polina Denichenko courtesy of Hebrew University)

A new treatment for aggressive brain tumours (glioblastoma) shows great promise, according to a report by Israeli scientists that was published recently in the journal Nucleic Acids Research.

Glioblastoma is a serious and incurable brain cancer. Patients receiving this diagnosis typically have 11 to 20 months to live. One of the main difficulties in treating this cancer is that its cells quickly build up a resistance to chemotherapy.

A team headed by Prof. Rotem Karni and PhD student Maxim Mogilevsky at Hebrew University's Institute for Medical Research-Israel Canada (IMRIC) designed a molecule that inhibits glioblastoma tumour growth by regulating the proteins it produces.

Karni explained that the MKNK2 gene produces two different protein products through a process called "RNA alternative splicing." These proteins have two opposing functions: MNK2a inhibits cancer growth, whereas MNK2b supports cancer growth.

Karni's new molecule shifts the splicing of MKNK2 so that production of the tumour-stimulating protein decreases, while production of the tumour-suppressing protein increases. As a result, cancerous tumours decrease or die. "Not only can this breakthrough molecule kill tumour cells on its own, it has the power to help former chemotherapy-resistant cells become chemotherapy-sensitive once again," said Karni.

"Our research presents a novel approach for glioblastoma treatment. In the future, we'll be able to tailor treatments for patients based on the amount of cancer-inhibiting proteins that their tumours produce," said Karni.

A patent for this technology has been registered and granted in the United States and Europe through Yissum, Hebrew University's technology-transfer company.

Also participating in the "Modulation of MKNK2 alternative splicing by splice-switching oligonucleotides as a novel approach for glioblastoma treatment" research were Adi Mogilevsky of IMRIC; Odelia Shimshon and Eylon Yavin of the Hebrew University Pharmacy School's Institute for Drug Research; Saran Kumar and Eli Keshet of the university's Department of Developmental Biology and Cancer Research; and Florian Heyd of the Institute of Chemistry and Biochemistry's Laboratory of RNA Biochemistry at Freie Universität Berlin.

Funding came from the German-Israel Foundation, Israel Innovation Authority, Israel Science Foundation, Israel Cancer Research Fund, Israel Cancer Association, Henry & Merilyn Taub Foundation and the Carol Epstein Foundation.

WORLD'S LONGEST SALT CAVE DISCOVERED IN ISRAEL

After holding the title for 13 years, Iran cedes title to israel

"Then the Lord rained brimstone and fire upon Sedom and Gomorrah…but [Lot's] Wife looked back and she became a pillar of salt." – Genesis 19.

(Jerusalem, March 28, 2019)—Following the biblical recounting of Lot's Wife who was turned into a pillar of salt, Israel's Dead Sea region is now famous for a second salt phenomenon: Malham Cave, the world's longest salt cave.

For thirteen years, this title was held by Iran's Cave of the Three Nudes (3N) on Qeshm Island. Now, an international expedition led by the Hebrew University of Jerusalem (HU)'s Cave Research Center (CRC), Israel Cave Explorers Club, and Bulgaria's Sofia Speleo Club, along with 80 cavers from nine countries, has successfully mapped the Malham salt cave in the Dead Sea's Mount Sedom which, at 10 kilometers long, now bears the title of world's longest salt cave.

Salt caves are living things, geologically speaking. They form mostly in desert regions with salt outcrops, such as Chile's Atacama Desert, Iran's Qeshm Island and Israel's Dead Sea. What helps them form is water—even arid climates see the occasional rainstorm. When it does rain, water rushes down cracks in the surface, dissolving salt and creating semi-horizontal channels along the way. After all the rainwater drains out, these dried out "river beds" remain and salt caves are formed.

Fitting this description is Israel's Mount Sedom, an 11km long mountain that sits 170 meters below sea level at the southwestern tip of the Dead Sea. Underneath a thin layer of cap rock, this mountain is made entirely of salt (just like the kind we season our food with). Two factors protect this mountain from dissolving away: the sturdy cap rock that covers its salt, and the arid climate of the Negev Desert. Mount Sedom gets roughly 50mm of rain a year, mostly in short but dramatic rain bursts. As Professor Amos Frumkin, director of the CRC at HU's Institute of Earth Sciences, explained, "The Malham Salt Cave is a river cave. Water from a surface stream flowed underground and dissolved the salt, creating caves –

Malham Cave, the longest salt cave in the world (Photo: Ruslan Paul)

a process that is still going on when there is strong rain over Mount Sedom about once a year." In this way, the Malham Salt Cave is "alive" and continues to grow.

Malham was initially discovered by the CRC back in the 1980's. Later, tens of CRC expeditions surveyed Mount Sedom and found more than 100 salt different caves inside, the longest of which measured 5,685 meters. Subsequent carbon-14 tests dated the cave as 7,000 years old, give or take, and successive rainstorms created new passages for the cavers to explore. When the international expeditions returned to Malham in 2018 and 2019, their surveys discovered the cave's record-breaking, double-digit length. "Thirty years ago, when we surveyed Malham, we used tape measures and compasses. Now we have laser technology that beams measurements right to our iPhones," Frumkin recalled.

Notably, Malham is the world's first salt cave to reach a length in the double-digits. By comparison, Iran's Qeshm Island salt cave, now the world's second largest salt cave, measures only 6,580 meters. In addition to its length, the Malham Cave contains a stunning array of salt stalactites and salt crystals within its chambers. These salt icicles hang from the cave's ceiling and grow longer and fatter as each drop of water rolls down before evaporating into the salty air.

The international cave expeditions that worked together to map Malham Cave include Israel's Cave Explorers Club, HU's Cave Research Center, and Bulgaria's Sofia Caving Club & Speleo School. The survey team included cavers from Israel, Bulgaria, France, United Kingdom, Croatia, Romania, Germany and the Czech Republic.

Boaz Langford, Member of HU's Cave Research Center and head of the 2019 Malham Cave Mapping Expedition: "Israel's salt caves are a global phenomenon. My colleagues around the world are always amazed at what we find here. Returning to survey Malham Cave allowed us to reveal its full dimensions and rank Israel as first among the world's longest salt caves."

Yoav Negev, Chairman, Israel Cave Explorers Club and project leader of the Malham Cave Mapping Expedition: "This entire project began with a call to Antoniya Vlaykova at Bulgaria's Sofia Caving Club & Speleo School. From the very beginning they showed real interest in collaborating with us and in taking on a central role in the project. Soon we had a 50-member delegation—half international, half Israeli. The Malham Cave is a one of a kind expedition that demonstrated the power of international caving delegations coming together to achieve something remarkable. The fact that we came away with a new world record is icing on the cake."

Efraim Cohen, Member of HU's Cave Research Centre: "Mapping Malham Cave took hard work. We cavers worked 10-hour days underground, crawling through icy salt channels, narrowly avoiding salt stalactites and draw-dropping salt crystals. Down there it felt like another planet. Our next and final step is to map the tightest spots and the most difficult ones to reach. When we're all done, it's likely we'll add a few hundred meters to Malham's impressive 10 kilometer length."

THE IMMACULATE CONCEPTION?

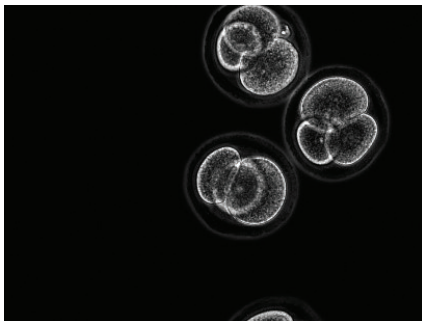
Forget sperm and eggs, Hebrew University researchers have created embryo stem cells from skin cells

(Jerusalem, May 2, 2019)—A new, groundbreaking study by the Hebrew University of Jerusalem (HU) found a way to transform skin cells into the three major stem cell types that comprise early-stage embryos. This work has significant implications for modelling embryonic disease and placental dysfunctions, as well as paving the way to create whole embryos from skin cells.

As published in Cell Stem Cell, Dr. Yossi Buganim of HU's Department of Developmental Biology and Cancer Research and his team discovered a set of genes capable of transforming murine skin cells into all three of the cell types that comprise the early embryo: the embryo itself, the placenta and the extraembryonic tissues, such as the umbilical cord. In the future, it may be possible to create entire human embryos out of human skin cells, without the need for sperm or eggs. This discovery also has vast implications for modelling embryonic defects and shedding light on placental dysfunctions, as well as solving certain infertility problems by creating human embryos in a petri dish.

Back in 2006, Japanese researchers discovered the capacity of skin cells to be "reprogrammed" into early embryonic cells that can generate an entire foetus, by expressing four central embryonic genes. These reprogrammed skin cells, termed "Induced Plutipotent Stem Cells" (iPSCs), are similar to cells that develop in the early days after fertilization and are essentially identical to their natural counterparts. These cells can develop into all fetal cell types, but not into extra-embryonic tissues, such as the placenta.

Now, the Hebrew University research team, headed by Dr. Yossi Buganim, Dr. Oren Ram from the HU's Institute of Life Science and Professor Tommy Kaplan from HU's School of Computer Science and Engineering, as well as doctoral students Hani Benchetrit and Mohammad Jaber, found a new combination of five genes that, when inserted into skin cells, reprogram the cells into each of three early embryonic cell types—iPS cells which create fetuses, placental stem cells, and stem cells that develop into other extraembryonic tissues, such as the umbilical cord. These transformations take about one month.



4-cell stage mouse embryos (Photo: Kirill Makedonski)

Professor Yossi Buganim (Photo: Shai Herman)

The HU team used new technology to scrutinize the molecular forces that govern cell fate decisions for skin cell reprogramming and the natural process of embryonic development. For example, the researchers discovered that the gene "Eomes" pushes the cell towards placental stem cell identity and placental development, while the "Esrrb" gene orchestrates fetus stem cells development through the temporary acquisition of an extraembryonic stem cell identity.

To uncover the molecular mechanisms that are activated during the formation of these various cell types, the researchers analyzed changes to the genome structure and function inside the cells when the five genes are introduced into the cell. They discovered that during the first stage, skin cells lose their cellular identity and then slowly acquire a new identity of one of the three early embryonic cell types, and that this process is governed by the levels of two of the five genes.

Recently, attempts have been made to develop an entire mouse embryo without using sperm or egg cells. These attempts used the three early cell types isolated directly from a live, developing embryo. However, HU's study is the first attempt to create all three main cell lineages at once from skin cells. Further, these findings mean there may be no need to "sacrifice" a live embryo to create a test tube embryo.

WOLLONGONG, HEBREW UNI'S UNITE FOR EXCHANGES

The University of Wollongong (UOW) has entered into an agreement with the Hebrew University of Jerusalem (HU) to facilitate student exchanges between the institutions.

The deal was signed in Sydney between HU vice-president for international affairs Professor Oron Shagrir and UOW deputy vice-chancellor Professor Alex Frino.

"We are honoured to be opening up exchange opportunities for students with Israel's highest ranked university," Frino said.

Shagrir, who was in Australia to discuss collaboration opportunities with local universities, said, "Wollongong is up-and-coming as a university.

"Australia is an attractive destination for Israeli students. This year we have four students in Sydney, four in Melbourne, two at the University of Western Australia, so they fill up the places really quickly."

AUJS UOW president Dana Segal also lauded the deal.

"AUJS UOW is excited about the exchange opportunities this partnership will bring to both Jewish and non-Jewish students. Israel's educational institutions stand with some of the best in the world and its vibrant innovation ecosystem offers students a truly world-class experience," she said.

While in Sydney, Shagrir also visited the University of Sydney to discuss expanding an existing exchange agreement, as well as Macquarie University, where discussions focused on a future joint PhD program.

He also presided, in Melbourne, over the signing of an agreement that will see the HU and the University of Melbourne offer a joint doctoral program.

"Melbourne is a great school, ranked first in Australia and it's very high by any standards in the world. So we will be very happy to launch this program," he said.

Professor Alex Frino (left) and Professor Oron Shagrir after signing the agreement.

Speaking to The AJN, Shagrir stressed the importance an innovative culture plays at HU, noting that Mobileye, Briefcam and OrCam were all developed there.

"In order to maintain this standard we doubled the amount of computer science students we train at the university, and we opened a new innovation centre that will train students," he said.

SCIENTISTS DESIGN DECOYS TO FIGHT CANCER

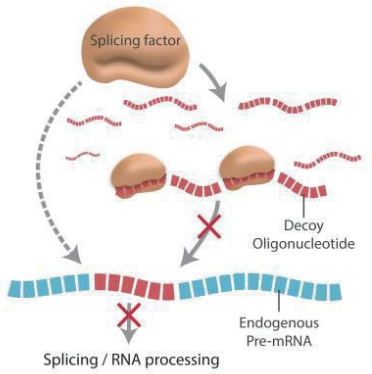
In recent years, it's become clear that RNA-binding proteins play a major role in cancer growth. These proteins, active in all cells but especially so in cancer cells, bind to RNA molecules and accelerate cancer cell growth. Unfortunately, no cancer treatment has targeted these proteins. Until now.

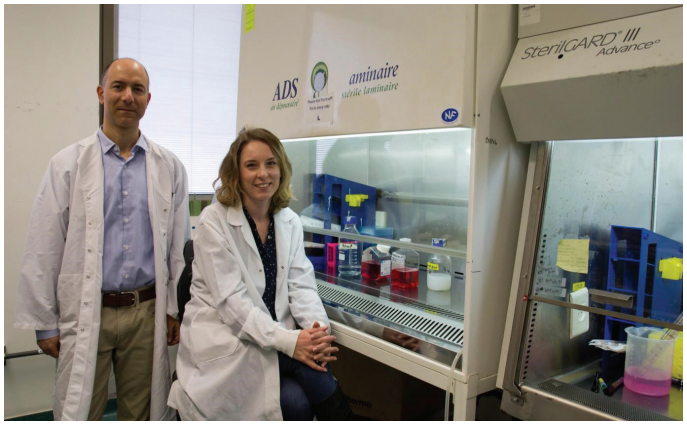
In the upcoming issue of Nature Communications, Professor Rotem Karni and his team at the Hebrew University of Jerusalem (HU) present a new technology to fight cancer. They designed decoy molecules that trick RNA-binding proteins into binding with them. Once bound, these RNA-binding proteins are no longer able to bind with the natural RNA molecules in cancer cells and lose their cancer-promoting activity. These "sterile" RNA molecule decoys are called oligonucleotides.

"Our technology is a new approach in the war on cancer. By understanding the biological function of RNA-binding proteins we successfully designed decoy molecules that inhibit these proteins and move us ever closer to creating an anti-cancer drug," shared Professor Karni.

Professor Karni and his HU Institute for Medical Research team, led by Ph.D. student Polina Cohen-Denichenko, developed several decoy molecules that inhibit the RNA-binding proteins that speed-up brain and breast cancer growth. To test the decoys, they treated brain cancer cells with decoy molecules. When the cells were then injected into healthy biological models, the cancer cells did not replicate and, soon after, the tumours died off.

Though this study tested the efficacy of decoy molecules on breast and brain cancer cells, Karni explained that his technology enables scientists to tailor-make decoys for other types of cancer, thereby streamlining and improving





Professor Karni and Ph.D. student Polina Cohen-Denichenko

treatment for cancer patients. “We still need to examine the toxicity of the decoy molecules and to test their efficacy before we can move on to humans,” cautioned Karni. “However, I’m optimistic, given that we’ve already succeeded at creating decoy oligonucleotides that inhibit RNA binding proteins in other kinds of cancers.”

To date, a patent describing this technology has been registered in the United States and Europe by Yissum, Hebrew University’s R&D company.

GENETIKA+ DEVELOPING A PERSONALIZED TEST TO HELP PHYSICIANS CHOOSE THE RIGHT DRUG TO TREAT DEPRESSION

Some estimates say more than 300 million people throughout the world suffer from major depression.

What does a robot for the elderly, a platform for global volunteering, and a 3D hologram technology for surgeons have in common? Impact, that’s what. Global impact. These are all Israeli companies focused on building impactful technology that is making the world a better place.

Genetika+ is no different, except that it is, for two main reasons. The first is that the company is taking on a problem a whole lot more taboo than the companies previously featured. The second is that they are only just beginning and have a long road ahead of them. But even though their solution is not on the market quite yet, this company, once again, illustrates just how impactful Israeli technology is on a global scale.

Mental health is a topic that many people discuss, but one which few people like to talk about. More than 300 million people suffer from major depression. Robin Williams, Marilyn Monroe and Anthony Bourdain are just some of the amazing people who we have lost to this terrible disease. Whoever you are and wherever you are reading these words, you know someone suffering from depression or other mental illnesses.

In the US alone, 17.3 million individuals suffered a depressive episode in 2017, 7.1% of the population. Up to 15% of these people will commit suicide in their lifetime. To treat depression, a physician might choose between one of more than 70 different medications. A third of the time, a patient will not respond after two rounds of different drug treatments. Those patients are referred to as “non-responders.” As each drug takes weeks or months to test, patients lose months to years of their lives looking for the right drug, and costing US healthcare providers $26.1 billion annually.

The first step in solving any problem was to dissect it, which is exactly what the founders of Genetika+ did. The key problem in treating depression, as they explained, is that while drugs are available for depression, the patients are not getting the drugs that are optimal for them.

Can you imagine seeing your doctor for a headache or a cold, only to be told that he has no idea what the right medicine is for you and that you should experiment with a few to know which one works? Shouldn’t that test be happening in a lab rather than in your body?

Genetika+ is developing a personalized test to help physicians choose the right drug for each patient. To do this for the first time, the company is taking a patient’s blood sample and generating their cell-based screening platform for each patient and testing each drug test against this model. They combine this with the patient’s genetic background and patient history to provide a reliable and accurate prediction of which drug is right for the patient. Initially, Genetika+ will be selling its test to US-based physicians but then intends to expand to other countries. The company is also developing pipelines with pharmaceutical partnerships for accompanying drug development.

The company has raised an initial $1.4 million in funding from Meron Capital, Jumpspeed Ventures, Sapir Venture Partners, one angel – Howard Morgan, founder of First Round Capital in the US – and most recently, the Israel Innovation Authority. They are based in the BioGiv facilities of the Hebrew University campus where a retrospective clinical trial to demonstrate their patient outcomes is underway. They will conclude this retrospective clinical trial by the end of 2020 and aim to enter the market at the start of 2021.

The founding team of Genetika+ is comprised of two women who have chosen to make their lives in Israel. Dr. Daphna Laifenfeld returned after a successful career and 10 years in the US, and Dr. Talia Cohen Solal made aliyah from New York in 2017. Cohen Solal told me, “The biotech environment in Israel has provided an amazing landscape in which to get our company off the ground.” Drs. Cohen Solal and Laifenfeld founded Genetika+ based on their desire to translate the latest developments in technologies from academia to make patients’ lives better. Through family and dear friends, they have felt the difficulties and suffering of those searching for the right medication.

The declared mission of these remarkable women: Do whatever it takes to improve the lives of those suffering from major depression and other mental illnesses.

The Jerusalem Post by Hillel Fuld / May 10, 2019


Genetika+ is part of the BioGiv Excubator, located in the high-tech village of Hebrew U’s Givat Ram campus.

HU PROF. ON EUROVISION: IT'S KITSCH AND CORNY AND ISRAELIS LOVE IT!

When it comes to kitschy, corny music contests, Eurovision is the queen of the bunch, nearly as popular as the World Cup, given that it's often as cringe-worthy as an elementary school play.

Yet Israelis have a deep, abiding affection for this 56-year-old song festival, a near obsession that reached an all-time high with Netta Barzilai's winning performance of "Toy" last year, and the subsequent hosting of the event in Tel Aviv.

So what is it about this pop music festival that has captured the Israeli imagination? It's all about being part of the "in" crowd, according to more than one Eurovision expert.

The Eurovision Song Contest offers Israel, generally the least popular country among the nations, the opportunity to be one of the popular kids, at least for the week of the competition.

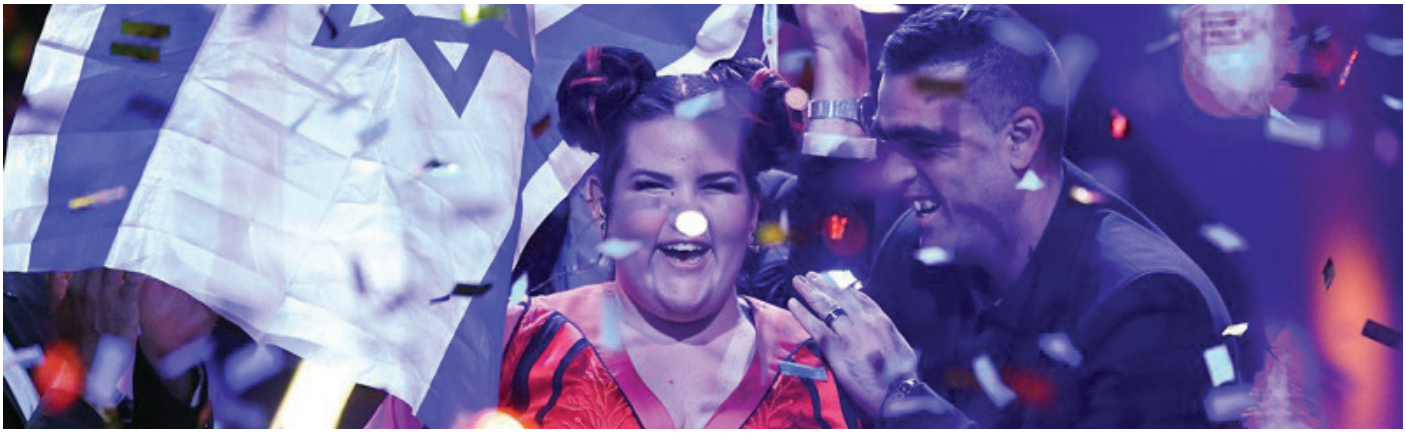
"We have this anxiety about being isolated, and this desire to be seen as part of the international community, to be the fun, liberal, cosmopolitan state," said Galia Press-Barnatan, an assistant professor of international relations at Hebrew University of Jerusalem. "We want to be part of something, and Eurovision was one of the first significant international cultural events that Israel took part in."

"The idea is to create hits, the least complicated, the kitschiest, the kinds of songs you can sing two minutes after first hearing them," said Sommer-Cohen. "It's not about something personal or sending a message." The song contest offers the classic combination of a musical competition, providing Israelis with music, singing and a platform to feel that they're part of something more international.

Despite all the criticism of Israel worldwide, and Israel's lack of warm international friendships, the country has still won the Eurovision four times, and gets to host the song contest, again. It even scored a performance from American pop icon Madonna at this year's competition, despite the fact that North America has never participated in this very European event.

Eurovision offers a form of escapism for Israelis, said Dunkelman, a chance to set aside all the problems the country has and to be part of something bigger. It's Israel that's being represented, not just the singers.

The Times of Israel by Jessica Steinberg / May 12, 2019



Netta Barzilai celebrates after winning the Eurovision Song Contest grand final in Lisbon, Portugal, May 12, 2018.

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