BIU Scientist Identifies Gene Causing Kidney Tumors

Dr. Achia Urbach has just published the results of research he performed while doing his Postdoc at Boston Children’s Hospital (before joining the Mina and Everard Goodman Faculty of Life Sciences) in which he found an important link between the Lin28 gene and Wilms Tumor. Wilms Tumor comes about due to the improper development of the kidney during the fetal stage and is the most common form of kidney cancer in children. Urbach and his research associates found that when the gene was overexpressed at later stages of fetal development this stunts the complete development of the kidney, in turn causing the kidney tissue to reproduce at a faster rate than normal. The uncontrollable reproduction of fetal cells results in growths similar to Wilms Tumor. They found that by stopping the expression of the gene after the rapid replication of kidney cells has already started, they could halt the tumor’s continuing growth. Urbach’s findings open the door to further research in kidney development, such as controlling the expression of Lin 28 to rapidly grow new kidney cells or even stop the growth of oncoming kidney tumors.

Finding a Cure for the “Rose of Jericho”

With the Israeli government investing NIS 10 million in the effort to fight the spread of the serious skin disease known as the “Rose of Jericho” or cutaneous leishmaniasis, Prof. Shula Michaeli (along with associates Dr. Yaniv Lustig and Dr. Hanoch Goldschmidt, and PhD Student Ronen Hope), is at the forefront in searching for a cure. In the past decade, more than 1,650 Israelis from 50 communities have been diagnosed with the disease. The infection appears as red sores (hence its nickname) on the skin that erupt weeks to months after the person affected is bitten by sand flies. The infection can also damage the liver and spleen and cause anemia. The sores can cause permanent, ugly scars if untreated.

Prof. Michaeli’s research, recently published in the peer-reviewed scientific journal Science Signaling, has focused on the parasite’s basic function in order to find a device that will cause it to destroy itself. The single cell parasite has only one mitochondrion which, when the parasite is being threatened, has a self-destruct mechanism in order to not threaten its own surrounding and fellow parasites, thus allowing for a “clean death” that won’t hurt healthy cells surrounding it. Through Michaeli’s research on a “cousin” of the leishmaniasis, called Trypanosoma brucei (T. brucei), which causes African sleeping sickness, she has found the protein which signals the parasite to self-destruct. Through the many similarities between the two parasites, the researcher hopes to discover scientific solutions for both diseases.

Studying Corals in Space

The study of the behavior of corals and other marine organisms in the absence of gravity could pave the way to the development of new materials for industry and biomedicine. This is the aim of the SpaceBioMat (Space Bioreactor for Marine Mineralization Material Research) project, an international collaboration including BIU Prof. Emeritus Zvy Dubinsky and scientists from the universities of Amsterdam and Bologna. The researchers intend to send their experiments to the orbiting laboratory in the European module Columbus of the International Space Station. The project was selected by the European Space Agency (ESA) under the European Program for Life and Physical Sciences in Space (ELIPS) program that is involved in increasing knowledge on physics and life science through experiments made on board the International Space Station.

Studying the behavior of organisms in the absence of gravity – researchers explained with regard to corals – may be useful as a reference to develop new materials that could have a number of applications in the fields of biomedicine and industry, such as in the study of osteoporosis and other diseases, or to develop bone and dental prostheses.
Medical Students Make Aliyah from France to Northern Israel

The School of Medicine is growing by leaps and bounds. This year some 500 students are registered in both the School’s three- and four-year MSc and PhD programs. Medical students from the first class of the three-year program are now interning throughout the country and the first class of the four-year program will graduate at the close of the academic year.

In the last year Israel has seen a dramatic upsurge in aliya from Europe. This year the medical school welcomed three new immigrants from France. Among them, Laura Derman and Rina Benhamou immigrated to Israel to complete their medical studies at the BIU School of Medicine in the Galilee. The young women are “fulfilling the goals of the program not only by becoming doctors in Israel but also by helping to develop and further medicine in the north,” says Dr. Masad Barhoum, director of the Western Galilee Medical Center, which is one of the hospitals associated with the medical school.

“A lot of my friends warned me that it is dangerous in Israel, especially being in a hospital so close to Lebanon. I say that there is no place that is more or less safe in Israel, and, indeed, in the whole world. In fact, there are incidents in France that also threaten our personal safety,” says Derman. “We have incredible lecturers at the school and talented doctors and nursing staff in the medical centers where we were placed,” adds Benhamou. “As a result of my success here many of my friends back in France want to make aliya and integrate into the program,” she adds.

Joint Conference of Medical School and Affiliated Hospitals

In November the BIU School of Medicine in the Galilee and its affiliated hospitals in the north held a joint conference focusing on “Genetics, Epigenetics and the Environment.” Among some of the topics presented and discussed: “Are We Born Sterile,” “Clinical Diagnosis of Congenital Heart Disease,” “Can We Promise the Public Genes for Psychiatric Disorders,” and “Epigenetic Dysregulation in the Brain of Individuals with Autism Spectrum Disorders.”

In opening the event, Prof. Ran Tur-Kaspa, Dean of BIU School of Medicine in the Galilee, and Dr. Masad Barhoum, Director of the Western Galilee Medical Center in Nahariya (where the conference took place), both emphasized the importance of bio-medical research in the Galilee, and noted the great contributions to the north of the school and the medical center, adding that the purpose of the conference was to get researchers together in the Galilee to take part in scientific discussion and work together to advance science and medicine.

Supercomputers and Drug Design

Bioinformatics scientist Dr. Avraham Samson is head of the medical school’s new structural and computational biology lab, where he is formulating new drugs using computer imaging. He and his team are working on the development of new drugs to fight cancer and Alzheimer’s disease. His lab recently received a grant from the European Community for its research.

Samson is also involved in a project aimed at treatment of head trauma together with Prof. Jean Soustiel, head of neurosurgery at the Western Galilee Medical Center. In such injuries, healthy tissue is damaged by nearby tissues that have suffered trauma. While there is no way to prevent this yet, the researchers are developing a drug, with the use of a supercomputer that carries out calculations and observes molecular movement, that would save healthy tissues from being affected by the damaged ones.
Flurry of Activity at the Midrasha and Beit Midrash of the Ludwig & Erica Jesselson Institute for Advanced Torah Studies

The Midrasha, headed by the dynamic Dr. Tova Ganzel, runs a number of diverse events and learning “happenings” throughout the year in order to enrich the lives of students and the public, among them lecture and Torah study programs for both women and men that are open to the public at large, with BIU students receiving Jewish Studies credits. Among the weekly lectures, "B’Go" meets on Mondays, bringing inspirational guest speakers, from prominent spiritual leaders to rabbis, teachers, scholars and psychologists, to speak on diverse topics. The evening Midrasha Beit Midrash Program, held on Tuesdays, invites leading Torah personalities who give classes on Torah related subjects. Both programs attract close to 100 young men and women every week.

In addition, the Midrasha attracts crowds to their conferences featuring interesting speakers during other Jewish holidays, such as a new Elul Program sponsored by Norman Sternthal of Montreal, which attracted hundreds of participants, and the recent Chanukah event. Campus Shabbatot, organized by the Campus Rabbi and the Midrasha, give students an opportunity to stay on campus, enjoy Shabbat meals, spend time with friends and hear from different guest speakers.

New immigrants are drawn to the English Beit Midrash, consisting of a lecture in their mother tongue.

Nitzotzot Shachar, the year-long program for outstanding doctoral candidates run by the Jesselson Institute and the School of Graduate Studies, offers a multidisciplinary forum of discussion about different challenges facing the forefront of science and Torah. On December 30 the seminar featured the director of the Program for Hermeneutics and Cultural Studies, Prof. Avi Sagi, who spoke on “Conversion, Exile and Sovereignty.” The next day the Jesselson Institute’s Flagship Nitzotzot Torah and Science Forum convened to discuss “Immunology and Cancer Research: the Human and Halakhic Immune System.” Among featured speakers: Rabbi Shabtai Rappaport, Nitzotzot founder and head of the Beit Midrash; Dr. Cyrille Cohen, who heads the Tumor Immunology and Immunotherapy laboratory in the Mina and Everard Goodman Faculty of Life Sciences; and Rabbi Dr. Sharon Shalom, lecturer on traditional Jewish Ethiopian practices.

Along with providing “enriching nourishment for the mind and soul,” all these programs also offer light refreshments.

Ackerman Family Fellowship Brings Students from Around the World to Israel

Thanks to the generous support of the Ackerman family of South Africa, about two dozen fellowships are to be awarded to college students around the world wishing to participate in its annual archaeological excavations at Tell-es Safi/Gath.

Front row: Prof. Miriam Faust, BIU Rector; Dr. Merav Galili, Director, Global Resource Development Operations; Vera Muravitz, Chairman, International Friends of BIU; Prof. Esther Eshel, Zalman Shamir Dept. of Bible; Prof. Ehud Weiss, Martin (Szusz) Dept. of Land of Israel Studies and Archaeology. On both sides of them - students and staff members of the Ackerman Family expedition

Back Row: Prof. J. Chadwick, Brigham Young University; Prof. Boaz Zissu, Chair, Martin (Szusz) Dept. of Land of Israel Studies and Archaeology; Prof. Aren Maeir, Director of the Ackerman Family expedition, Martin (Szusz) Dept. of Land of Israel Studies and Archaeology; Dr. Amit Dagan, Director of Laboratory of the Ackerman Family Expedition, Martin (Szusz) Dept. of Land of Israel Studies and Archaeology; Dr. Liora Horwitz, Hebrew University
Eliminating Violence against Women and Children

Last month the Ruth & Emanuel Rackman Center for the Advancement of the Status of Women in the Faculty of Law (www.rackmancenter.com) initiated an important debate at the Knesset Committee on the Status of Women and Gender Equality which took place on the International Day for the Elimination of Violence against Women. The debate was highlighted by a speech by Karen Levy who was represented by the Rackman Center in the relocation procedure which enabled her to move with her children to the US in order to seek refuge from her violent ex-husband. Last June, as part of the custodial agreement, little Sarah and Yishai were flown to Israel to spend time with their father. They never returned to their mother. He brutally murdered them as an act of revenge against his ex-wife.

Karen Levy’s story is an unfortunate illustration of exactly what the Rackman Center fights to prevent. “We do not only provide legal advice and representation, emotional guidance and assistance to women in need, such as Levy,” says the Center’s Executive Director, Dr. (Adv.) Galit Shaul, “But we are also successful in getting laws passed that give practical aid and relief to women in distress.” Indeed, the Center’s Legislation Unit, headed by Adv. Keren Horowitz, was instrumental in getting two important pieces of legislation passed in the Knesset in recent months relating to women in abusive marriages.

“Amendment 15 of the Family Violence Prevention Law enables the court to extend a protection order which was issued against a violent spouse from one year to two years (the protection [or restraining] order prohibits the violent spouse from entering the family apartment or being at a nearby distance of the other spouse and their children),” says Dr. Shaul. “Now women do not need to re-apply every year for a restraining order as was previously the case, but are protected by law for an extended two-year period, giving them more ‘breathing’ space.”

“The other law we helped get passed is a regulation concerning rental rights in a public apartment during a couple’s separation,” she adds. “This regulation, along with the Public Housing Tenant Rights Law, determines that in case of a separation the right to the public apartment rental will be given to the spouse with the most children in his/her custody. The purpose of the regulation is to help prevent the possibility of one spouse exerting economic pressure on the other as a condition for granting a Get.”

Rackman Center Director Receives Prestigious Award

Congratulations to Prof. Ruth Halperin-Kaddari, the recipient of this year’s Katan Award for the Advancement of Gender Justice through Voluntary Work. The Award was bestowed upon Halperin-Kaddari by the Ruach Nashit NGO in Israel in recognition of her long-term commitment to social activities and volunteerism on behalf of women and Israeli society, and for upholding the values that were dear to the late Prof. Yosef Katan, in whose memory the Award was founded. Halperin-Kaddari was recognized in particular for the establishment of the Rackman Center and the legislative and policy work the Center promotes towards the advancement of women’s rights and legal aid for disadvantaged women; educational and scholarly work for gender justice; advancement of feminism within Jewish Orthodoxy; and her international influence through her work on the United Nations Committee for the Elimination of Discrimination against Women (CEDAW).

BIU Prof. takes on US Supreme Court

US-born BIU Prof. Ari Zivotofsky has been in the news, not this time for his scientific brain-research findings, but instead, because of his landmark case against the US Supreme Court to have the US recognize the country of Israel as the place of birth of his son, rather than just the city of Jerusalem (where the boy was born). The US refusal to recognize Jerusalem as part of Israel is what led Zivotofsky to object to this “arbitrary and anti-Israel” situation. Little did he know that his involvement in a suit to change the law “would take 12 years and go up and down in the court system, but, yes, it was worth fighting for,” says Zivotofsky, who following the final hearing at the beginning of November is “cautiously optimistic about the outcome of the Supreme Court ruling, adding that “it is a significant case and it will be significant in terms of its ramifications.”
“Night of the Scientists”

BIU was an active participant in the country’s annual Leil Hamadanim ("Night of the Scientists"), recently organized by the Science, Technology and Space Ministry and the European Commission, in which 13 universities, research institutes and science museums brought science closer to the general public – especially youth – for free.

On the Bar-Ilan University campus in Ramat Gan, over 10,000 people including BIU President Rabbi Prof. Daniel Hershkowitz enjoyed scientific lectures, clips, exhibitions, shows and activities for the entire family, spread over various buildings and gardens on BIU’s campus grounds. Among the highlights: a “physics circus” and electrical and laser displays where visitors took part in labs on the use of gold to discover and treat cancer, the nervous system of leeches, artificial vision for the blind and why people make irrational decisions.

Meanwhile, up north in Safed at the BIU School of Medicine in the Galilee, over 1,000 people enjoyed the “sea and water” theme, which included presentations and demonstrations on protein structure, water animals, water microbiology, extracting DNA from fruit, and harvesting energy from waves, among others. Doctors also presented lectures on the human body. Medical School Dean Prof. Ran Tur-Kaspa and Safed Mayor Ilan Shochat greeted the attendees, with both mentioning the great contribution the school is making to the city and region, and the strong relationship that has developed between the faculty and the community.

Adding to the fun, on both campuses there were booths with games, arts and crafts, juggling, and inflatable bounce houses.

Parashat HaShavuah & Open Bible Lectures Enrich BIU Campus Life

Bar-Ilan University hosts a number of open-to-the-public lectures and shiyurim on a variety of subjects, drawing hundreds of visitors to campus. Every Wednesday Campus Rabbi Shlomo Shefer gives a shiyur on the weekly parasha (portion), open to students and the general public, held in the Schleiffer Synagogue on campus.

In addition, the Zalman Shamir Bible Department together with the local Givat Shmuel Municipality offers a popular lecture series open to the general public on the Bible, with this year’s topic focusing on “Character and Morals: the Book of Samuel.” Meeting twice a month on Mondays in the Mintz Auditorium on campus, attendees are treated to lectures by noted Bible authorities.

BIU Hosts Shabbatonim for New Immigrant Students and Lone Soldiers

The BIU Student Union, Dean of Students Office and Nefesh B’Nefesh GSC (Givat Shmuel Community) co-sponsor Shabbatonim where participants can hang out with old friends and make some new ones at communal tefilot, Shabbat meals, Friday night Oneg Shabbat, and a potluck Seudah Shlishit in the park. Olim students on and off campus are finding that the Shabbatonim are the best way to meet other new community members and veteran students, lone soldiers, young professionals, and married couples.
Special Preparatory Program for Haredim at BIU

In accordance with the national goal of encouraging members of the ultra-orthodox haredi community to train for careers so that they will become more self-sufficient, BIU has established the Haredi Mechina for Pre-Academic Studies. This year 30 haredi students enrolled in the 14 month Mechina program, which prepares them for higher education by providing courses in math, English and Hebrew. The students feel comfortable in this special milieu, which holds separate classes for men and women. Next year, the Mechina plans to open advanced programs in psychology and economics.

BIU Grad Wins Prestigious National Composer’s Award

Dr. Margaret Liat Wolf, an alumna of the BIU Department of Music, was awarded the Prime Minister’s Prize for Composers this year for her “unique and daring creativity” along with her “outstanding artistic integrity.” The Prime Minister’s prize is aimed “to inspire and enrich the quality of Israeli creativity” and to enable the chosen composers to devote themselves to composing a new major work.

BIU Celebrates 60th Anniversary

The coming year marks 60 years since the opening of Bar-Ilan University in 1955. In the six decades since its founding, Bar-Ilan University has grown in size and in breadth (from some 70 students in its inaugural class to over 30,000 students in all its institutions today) BIU takes pride in upholding the very raison d’être of its creation – its belief in the centrality of Israel to the Jewish world as its national homeland and the recognition that our traditional Jewish values are the very core of our being – and looks forward to a bright and productive future.