

MEDICAL BRIEFS

BIU Faculty of Medicine Forges Vital Research Ties with U of Miami

BIU's Faculty of Medicine in the Galilee and the University of Miami's Miller School of Medicine recently signed a milestone agreement which will promote further collaboration. Specifically, the two institutions will explore the joint development of a cancer center which will integrate scientific research conducted by basic, translational and clinical faculty. They will seek to promote scientific cooperation with key US and international organizations for purposes of conducting translational and clinical research. Additionally, they will work to establish strong links with the University of Miami Sylvester Comprehensive Cancer Center (SCCC) to facilitate scientific, educational and clinical collaboration, and to develop a state-of-the-art graduate program in cancer biology. "BIU President Prof. Moshe Kaveh and I are very proud of the valuable ties we have established with the University of Miami in general and its world-class medical school in particular," said BIU Faculty Dean Prof. Ran Tur-Kaspa.

Medical Faculty Provides Fitting Venue for Scientific Conferences

Within months of its founding, BIU's Faculty of Medicine is fast becoming a popular venue for medical and scientific gatherings. Hosting its first Translational Research Meeting to promote and facilitate collaboration with regional hospitals and research and healthcare centers, the Faculty gave expression to its special approach, in which basic research aims to be clinically, diagnostically and therapeutically applicable. The renowned Prof. Nathan Levin of the Renal Research Institute in New York delivered the opening plenary lecture. Presentations by Faculty members and local medical researchers focused on diverse topics, including prevention of kidney failure, the mechanisms of ovarian aging, biological markers for prognosis and treatment in cancer, the role of heavy metals in drinking water and air pollution in the development of Alzheimer's disease, and antibody-mediated neutralization of Hepatitis C virus. The Meeting provided a unique op to showcase the rich research activity underway in Israel's north at hospitals associated with the Faculty.

Other recent events held at BIU's new Faculty of Medicine include the annual meeting of the Israeli Association for Infant Mental Health, which was devoted to the subject of the family in crisis; and the 2nd International

Urogynecology Congress, which featured addresses by experts from the University of Chicago, Moscow Medical Stomatological University, CHU Reunion of France, and Israel hospitals. The Congress was co-sponsored by the Faculty, the Ziv Medical Center in Safed, the Israeli Society of Urogynecology and Pelvic Floor, and the Israeli Urological Association.

Faculty Partners to Nurture Future Galilee Doctors



Intent on improving the "prognosis" for young aspiring residents of Israel's north, the Faculty of Medicine is treating local high school pupils to some hands-on scientific enrichment. The new "Pirchei Refuah" initiative – run by the Safed Education Department in cooperation with BIU's Faculty of Medicine, the Ziv Medical Center, and the "Atidim" project – targets outstanding local high school pupils, affording them with specialized science training and encouragement to pursue a medical career. Completing a unit on the heart and circulatory system, participants had a unique "practicum:" guided by Faculty students, they paired up in labs to perform "heart surgery." Seems like the 46 participants are well on the road to realizing the words of Safed Mayor Ilan Shochat, who told them at the recent dedication ceremony in the Faculty auditorium: "You are the next generation of doctors in Safed, and the city will be proud of you."

Dream Come True for Ethiopian Med Student

"When I was in elementary school, as part of extracurricular science activity, we visited Soroka Hospital (in Beer Sheva), where we saw how blood tests are done. I found it fascinating and ever since, I dreamed of being a doctor." So recounts 32-year-old Dan Gashai, who is currently enrolled in the BIU Faculty of Medicine. Even with his heavy course load, Gashai, who immigrated to Israel at the age of two, feels an obligation to his community, volunteering at the local absorption center, where he assists Ethiopian children with their homework.

SCIENCE & TECHNOLOGY

DNA Nanorobot Targets Cancer Cells

Dr. Ido Bachelet of BIU's Mina and Everard Goodman Faculty of Life Sciences has collaborated with Harvard colleagues on a new weapon against cancer: a DNA Nanorobot which can target and destroy leukemia and lymphoma cells. The innovation was described in a recent *Science* journal article, which Bachelet co-authored with Shawn Douglas and Prof. George Church, his postdoctoral research supervisor. The robot is a hinged barrel-shaped structure constructed using the DNA-origami method. The barrel is kept closed by DNA latches that recognize and attach to cancer cells. Once attached, the latches open and deliver their payload. DNA robots have great potential as therapeutic agents because they are constructed from materials intrinsic to the body. Their action is modeled on the activities of white blood cells, and their latches and payload can be customized to the condition being treated.

BIU Lab Developing Portable Dialysis Device to Mimic Kidney Function

A small, portable dialysis device, now being developed by Dr. Rachela Popovtzer of the Faculty of Engineering and the Bar-Ilan Institute of Nanotechnology & Applied Materials (BINA), promises to provide kidney patients with a welcomed alternative to the time-consuming and painful process in use today. The device will be designed to either be implanted in the patient or be portable, and will prevent the nightmare of frequent contact with hospitals and hooking up to cumbersome machines. "We sought technology that would enable the production of a small and portable device that could work continuously and thereby solve the problem of phosphate removal along with other molecules which are not being filtered," explains Popovtzer. "My idea was to insert nano-particles into a small dialysis chamber which will connect to the molecules that need to be removed with a chemical bond, including the phosphate molecules. The continuous activity of this system will create a situation similar to the natural state in which continuous filtration of poisonous material is performed by the kidneys." The BIU Returning Scientist says that at the end of the current developmental process, "the purpose will be to connect the device to the existing dialysis system and to remove the problematic phosphate which the current machines are not able to remove."

Laser Ray Invention Detects Blood-Alcohol Level from a Distance

One drink too many? A new instrument employs laser rays to gauge the concentration of alcohol in the blood without having to touch the person being checked. A convenient alternative to the breathalyzer, the device was designed by students Asaf Shanhav and Ziv Brodie as part of their final Engineering Bachelor's project, under the supervision of Prof. Zeev Zalevsky and Dr. Yevgeny Beiderman. It has an optic sensor which emits an infrared laser ray to the skin of the person being checked, as well as a camera which films the process. By analyzing the movements of the skin surface, the device can calculate the level of alcohol in the blood. Another innovation featured in the exhibition of student final projects was Snooker- and Soccer- playing robots, developed under the guidance of Dr. Eli Kolberg. Prof. Sharon Gannot, head of the Speech and Signal Processing Laboratory and responsible for Faculty projects, says that students thus gain experience in advanced project development.

Satellite Images Guide Farmers in Planting Crops

Dr. Itamar Lensky of the BIU Department of Geography and Environmental Studies enlists satellite images to help farmers detect small-scale changes in climate and boost harvests. The novel method, which he co-developed with Uri Dayan, a climatologist from the Hebrew University, was recently published in the *Bulletin of the American Meteorological Society*. The two are now working to develop it into a global interface that will assist farmers on any continent. Lensky, who heads BIU's Remote Sensing Lab, said their system uses real-time thermal images provided by NASA and analyses the surface temperature of each individual plot. Want to know when it's best to plant seeds and spray pesticides? Ask your local satellite!

BIU Brain Scientist Lectures in Tashkent



Prior to his informative talk on "Saccades in Neuro-degenerative Diseases," Dr. Ari Zivotofsky (second from left) of BIU's Leslie and Susan Gonda (Goldschmied) Multidisciplinary Brain Research Center poses with colleagues at the Tashkent State Post-Doctoral Medical Institute and the Israeli Ambassador to Uzbekistan, Dr. Hillel Newman (third from left), a BIU PhD grad in Jewish History

LAW, SOCIETY & HERITAGE

Probing the Media Impact on the Courts



The newly-released Hebrew book, *Open Court* (Matar Publishing House) by Dr. Anat Peleg – Director of BIU's Center for Law and Communications and former legal correspondent for *Kol Israel* radio – examines a hot-button issue: the media's influence on the judicial system. The first comprehensive research work in Israel and the entire Western World to explore this subject, the book is based on Peleg's doctorate thesis at BIU. While her research attests to the media's influence on

sentencing in Israeli courts and on the conduct of lawyers and judges, it does not support the popular contention that the media influences the actual verdicts arrived at by the courts. The book, which evaluates 100 cases throughout Israeli history which deal with the subject, draws upon interviews with more than 90 prominent figures in law and the media, including past and present Israeli Supreme Court Justices and veteran journalists.

Rackman Center Helps Push through New Laws in the Knesset

Two new laws have passed, which BIU's Ruth and Emanuel Rackman Center for the Advancement of the Status of Women was instrumental in pushing forward in the Knesset!

1. Women who are *Agunot*, are in the midst of the divorce process, or have to leave their homes because of a violent husband will now retain their rights to social housing.
2. Women will continue to receive their rightful alimony from social security in the event that they travel abroad.

A Center spokesperson notes that these successes "only encourage us further in our ability to make real changes for women in family law. We also have eight other laws in the legislation process and of course many more bills in preparation for submitting in the future."

BIU Brain Researcher Sheds Light on Social Skills in Infants

Social behavior appears to be rooted in our brains even before birth. That is a key finding of an intriguing experiment on development within neonates born pre-term, which was conducted by Dr. Ronny Geva of the Department of Psychology and the Leslie and Susan Gonda (Goldschmied) Multidisciplinary Brain Research



Center. Geva's research, which was recently published in *Social Cognitive and Affective Neuroscience*, indicates that we are pre-programmed as social organisms very early on. The brainstem – the lower part of the brain which connects the spinal cord and the higher brain networks – participates in the development of advanced functions in the mind, such as social behavior. Expounds Geva: "It is fascinating to realize that our social engagement skills are enabled by structures that we share with so many organisms on the planet, and that each fetus carries a pre-program endowed to us through phylogeny to take an active role in the community."

Exposing the True Jewish Identity of the Hasmonean Rulers

Countering conventional wisdom that the Hasmonean rulers had Hellenized completely, Prof. Eyal Regev, Chair of the Martin (Szusz) Department of Land of Israel Studies and Archaeology, offers evidence that the Hasmonean leaders in fact observed Jewish tradition and ritual, and behaved like the rest of their Jewish brethren. His investigation, recently published in the *Bulletin of the American School of Oriental Research*, is based on the finding of ritual baths (*mikvaot*) and the absence of non-Jewish vessels in the Hasmonean palaces. "The Hasmoneans demonstrated a great obligation to emphasizing their Jewish identity, but also tried to impress the neighbors in an effort to show them that they had a strong kingdom, well connected to the super power of the time – Rome." Eyal's study indicates that externally the Hasmoneans demonstrated power and grandeur in the way of the era, while preserving a deep connection with their Jewish faith and culture.

BIU in Action

BIU Delegation Wins Top Model UN Awards at Penn State



Congrats to the BIU's Model UN Society, which won four first places at the recent Pennsylvania United Nations Conference (PUNC)! Florida-born BIU undergrad Chaim Seligman is pictured as he proudly holds certificates for "Best Small Delegation" and "Best Delegate" for his performance as UK rep in the Security Council.

BIU Hosts National Junior Robocup Competition



Robots that dance, play soccer and rescue humans, along with their teen designers, convened at Bar-Ilan University for the National Junior Robocup Competition. Ashdod's Chet Comprehensive High School, with their robot, "Life Saver," won first place in the contest, which is part of the Global Robocup, whose *raison d'être* is to promote robotics research worldwide. Both BIU Rector Prof Haim Taitelbaum and Israel Robocup President, Dr. Eli Kolberg of the Faculty of Engineering, said that they hope in the future to see the talented contestants as "students and researchers in robotics as well as in other fields of study at BIU."

BIU Students Organize Day of Fun for Children from Israel's South



In the midst of the recent rocket barrage on Israel's south – which closed schools and sent local residents scurrying to bomb shelters and secure rooms – hundreds of children headed north to

the Bar-Ilan campus for a day of fun and games. BIU student organizers worked to set up the day's activities within just 24 hours, so that the children were able to participate in games and other special activities. "We are very happy to host these children," said BIU Student Union officials, who praised the residents of the south: "They show all of us what Israeli society is, what strength is, and its importance in facing the current challenges."

BIU Charges Forward in Energy Conservation

Bar-Ilan will be the first Israeli university to join the ESCO Corporation's energy efficiency project, which includes the replacement of between 20,000-30,000 lighting installments, and will enable the institution to save NIS 1.5 million annually. "We aim to be the pioneers in finding solutions, that, in addition to budget saving will create improvement in the environment," said Shmuel Gan-El, BIU Deputy Director General for Construction and Development.

Talk of the Town: Bar-Ilan Acting Society Performs "Rumors"



A scene from Neil Simon's comedy "Rumors" performed by BIAS (the Bar-Ilan Acting Society), which since 2004, has produced over a dozen plays in English. The BIU student-community theater group is assisted by the BIU Student Union and the University administration