



Ben-Gurion University of the Negev

ROSH HASHANAH APPEAL



BGU's 2020 vision.

This year marks the beginning of our campaign to celebrate the 50th anniversary of Ben-Gurion University (BGU) in 2020. We have ambitious plans to further expand the main campus in Beer-Sheva as we meet demand for places and expand our research facilities. The move of the Israeli Defence Forces (IDF) to the Negev (on a site just 15 minutes from BGU) is the beginning of a period of profound growth in Israel's south.

Our University has grown from a modest college in 1970, occupying a row of former shops in central Beer-Sheva, to a campus on the outskirts of the city providing classrooms, laboratories and dormitories for over 17,000 students today. In the next

decade we will expand further, doubling the size of our current campus. You can reach BGU today by train – we have our own railway station that services not only the University, but the expanding business park adjacent and the new suburbs rapidly growing around us.

Beer-Sheva and Ben-Gurion University are the realisation of a 21st century Zionism. Inside is a snapshot of some of the inspirational research and activities that drives our ambition to develop the Negev, contribute to building the State of Israel and improve the world and all humanity.

See inside for a snapshot of some of the inspirational research and activities your gift could support.

Sderot and its proximity to terror – the worrying after effects on its teens

Golan Shahar, Professor of Clinical-Health and Developmental-Health Psychology at BGU knows that in the Negev town of Sderot, a stone's throw from the Gaza border, fifteen seconds can be the difference between life and death. The city is always on alert against the frequent threat of rocket attacks from terrorist groups in Gaza.

The ongoing conflict in this southern region has now seemed to have had far reaching effects on the young people there and Golan and his research team have identified a worrying outcome: a sudden upsurge in anti-social behaviour and violence amongst some of the teenage population.

Over the past five years Golan has been studying the impact of the terror attack on Sderot from Gaza. His research to date has concluded that:

- Missile attacks, as well as suicide bombings, lead to severe depression amongst teenagers.
- Repeated and prolonged exposure to missile attacks also leads to adolescent violence; violence appears to beget violence.
- Social support protects against the adverse effects of exposure to missile attacks on adolescent violence, particularly when it is support provided by parents.

Thanks to our support last year, Prof. Shahar was able to begin his research this spring. His investigation involves speaking with teenagers in afflicted communities like Sderot. He aims to understand what types of support help overcome the stress and duress they experience living under the threat of rocket attacks. Using the information he collects will equip him to develop an effective treatment and ensure no long-term psychological effects are felt.

Now Prof. Shahar needs our support to help him develop the family-based treatment intervention to block the adverse effects of the missile attacks. Young lives will be protected and transformed thanks to his research and our support.



Prof. Golan Shahar

Climate Change and the future for farmers



The UK Government is required under the 2008 Climate Change Act to publish a UK-wide Climate Change Risk Assessment every five years. Its most recent report, published in July 2016, warned that “fertile soils will be badly degraded by mid-century”. It suggested that “if emissions are allowed to spiral, London summer temperatures could hit 48°C (118°F) in an extreme scenario.” In the future, UK farmers could be facing issues that are more familiar to subsistence farmers in some of the world’s desert climates.

British farmers could one day need the support of Ben-Gurion University desert research scientists like Prof. Simon Barak, a senior lecturer in plant sciences at BGU’s Jacob Blaustein Institutes for Desert Research. His research aims to modify plants to grow in salty soil or water which could go a long way in helping cultivate lasting food sources in places

with harsh conditions for plant life – for example a climate changed field in East Anglia! The problem is that an ability to shed salt is not the only requirement for growing well in salty areas.

Plants possess thousands of genes that can help the organism cope with many kinds of stress such as heat, drought or salinity. To grow in salty conditions, a plant needs to have multiple genes that change their expression in protective ways when growing conditions become challenging.

“There is no single magic bullet,” says Prof. Simon Barak, “But we have developed a computational method to sift through those genes and see what are most likely to be involved in stress tolerance.”

Prof. Barak constructed a stress gene database, gathering data from published experiments on the plant *Arabidopsis thaliana*. Using statistical

analyses that allow him to rank the importance of each gene for plant survival, he identified a number of promising candidates.

His group then ran tests on plants with mutated versions of those genes to see how the vegetation coped with harsh conditions. Mutants that showed tolerance to drought, salt or heat were then targeted for further study.

“In classical genetic screens for new mutants, you’ll screen thousands of plants of which maybe one to three percent might look interesting,” Prof. Barak says.

“We got a hit rate of 62 percent. We have enough mutants to last us our whole scientific lifetimes.”

The application of this research will create a new generation of crop plants tolerant to heat and drought.



Prof. Simon Barak

Community Action – it's in our DNA

Since BGU was founded over 40 years ago with a mandate to provide higher education, and to develop the Negev, it has recognised this role and reached out beyond campus to the people of Beer-Sheva. Students are encouraged to live in surrounding underprivileged areas, to volunteer their time and skills to a population who lack opportunity.

Programmes were developed by our students and created from their ideas in response to the need they saw in these neighbourhoods. Each year over 100 activities are organised by 125 students living in 73 rent free apartments throughout Beer-Sheva. In return for free accommodation students commit 8 hours per week to community involvement through mentoring children, running youth activities, and a wide variety of classes.

After school clubs are a vital programme offered to school aged children. They provide a safe and engaging space for kids to come to, keeping them off the streets and safe from harm. Help with homework, art, music and theatre clubs, sport and other enrichment activities are provided. Students share their academic and personal skills to enrich and enhance the lives of the kids they work with.

We need to provide equipment to support the programmes provided. Guitars for music clubs, trampolines for sports activities, library books to help with homework and furniture to enable the classes are urgently needed. With this equipment we can make a lasting difference to the lives of children living in some of Beer-Sheva's most disadvantaged neighbourhoods.



40% of students



participate in



community
service

Seeing is Believing



Why not add Ben-Gurion University to your itinerary on your next visit to Israel? See for yourself how the Negev is being transformed and developed through the work we do. Beer-Sheva, an emerging up-and-coming hub of technology and life sciences, is now only an hour's train journey from Tel Aviv.

Call Hannah Allen to arrange your visit and personal guided tour: 020 7446 8558 or email her at hannah@bguf.org.uk