

Moon Mission  
Safer Cybersphere  
Ethics Today



TEL AVIV UNIVERSITY REVIEW

A close-up photograph of a pair of dark-skinned hands cupped together, holding a mound of dark brown soil. Several small green seedlings with thin stems and tiny leaves are growing from the soil. The background is a blurred field of similar soil.

**Securing  
the World's  
Food Supply**



2014 Issue

Issued by the Strategic Communications Dept.  
Development and Public Affairs Division  
Tel Aviv University  
Ramat Aviv 69978  
Tel Aviv, Israel  
Tel: +972 3 6408249  
Fax: + 972 3 6407080  
E-mail: publicat@post.tau.ac.il

[www.tau.ac.il](http://www.tau.ac.il)

**Editor:** Louise Shalev

**Contributors:** Rava Eleasari Gelbetz, Tiffany Roberts,  
Judd Yadid, Sharon Domb, Ruti Ziv, Sandy Cash,  
Lisa Kremer, Maggie Weigle

**Graphic Design:** TAU Graphic Design Studio/  
Michal Semo-Kovetz

**Photography:** Development and Public Affairs Division  
Photography Department/Michal Roche Ben Ami,  
Michal Kidron

**Additional Photography:** Yoram Reshef, Yonatan  
Blum, Peter Halmagyi, Barak Aharon, Israel Sun,  
Israel Hadari, Andres Lacko, Alexander Mahmoud.

Copyright Nobel Foundation

**Administrative Assistant:** Sharon Domb

**Printing:** Havazelet Printing

## Cover story:

### Manna on the Menu 6

From improving wheat strains to protecting people's "food rights," TAU researchers are creating an integrated strategy for securing the world's food supply.

## sections

innovations 2

leadership 25

initiatives 29

events 32

digest 35

newsmakers 39

books 40

friends globally

## Safer Cyber Future 18

TAU wants to thwart computer break-ins that could threaten your bank account, your business or even your country.



## Indo-Israeli Love Affair 24

Increasing numbers of Indian students are finding a warm Sabra welcome and cultural affinity on the TAU campus.



## Seeds Bear Fruit 25

Nascent university technologies with commercial potential are attracting philanthropic investment.



**Officers of Tel Aviv University****Prof. Jacob A. Frenkel**

Chairman of the Board of Governors

**Dr. Giora Yaron**

Chairman of the Executive Council

**Prof. Joseph Klafter**

President

**Prof. Aron Shai**

Rector

**Mordehai Kohn**

Director-General

**Prof. Raanan Rein**

Vice President

**Prof. Yoav Henis**

Vice President for Research and Development

**Amos Elad**

Vice President for Resource Development

**Robert Goldberg, Harvey M. Krueger,****Dr. Raymond R. Sackler, Michael H. Steinhardt**

Honorary Chairmen of the Board of Governors

**Dr. h.c. Karl Heinz-Kipp**

Deputy Chairman of the Board of Governors

**Dr. h.c. Josef Buchmann, Stewart M. Colton,****James Dubin, Prof. François Heilbronn,****Dr. h.c. Raya Jaglom, Adolfo Smolarz,****Melvin S. Taub**

Vice Chairpersons of the Board of Governors

**Prof. Dina Prialnik**

Vice Rector

**Prof. Dany Leviatan**

Pro-Rector

**Prof. Zvika Serper**

Dean of the Yolanda and David Katz

Faculty of the Arts

**Prof. Ehud Heyman**

Dean of the Iby and Aladar Fleischman

Faculty of Engineering

**Prof. Yaron Oz**

Dean of the Raymond and Beverly Sackler

Faculty of Exact Sciences

**Prof. Eyal Zisser**

Dean of the Lester and Sally Entin

Faculty of Humanities

**Prof. Ron Harris**

Dean of the Buchmann Faculty of Law

**Prof. Moshe Mevarech**

Dean of the George S. Wise

Faculty of Life Sciences

**Prof. Asher Tishler**

Dean of the Faculty of Management—Leon

Recanati Graduate School of Business

Administration

**Prof. Yoseph Mekori**

Dean of the Sackler Faculty of Medicine

**Prof. Tammie Ronen**

Dean of the Gershon H. Gordon

Faculty of Social Sciences

**Prof. Yoav Ariel**

Dean of Students



Dear Friends,

When students at our School of Mechanical Engineering agitated to set up a race car team, we said, “go for it.” As you would expect, the students applied that famous Israeli startup energy to win seed funding and sponsors, design and construct the vehicle, arrange for testing and support personnel, and participate in a student racing competition in Italy.

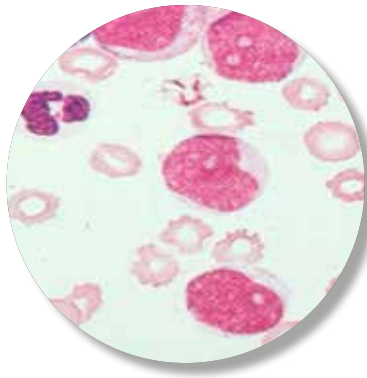
My office enthusiastically joined in by providing some funding, which may explain why I look so gratified and proud in the picture.

The fact is, though, that every day of the year I feel a sense of pride in our students’ innovative spirit. Whether they are pioneering new historical insight, or wonderful technologies, or novel ways to help in the community, Tel Aviv University students are among the most creative and entrepreneurial in the world.

That is why TAU never stops and never rests in its efforts to provide the most cutting-edge study programs, teaching labs and research facilities for our students. We owe these outstanding young people the very best conditions to excel in their studies and careers – and to have some fun in the process.

Yours sincerely,

Professor Joseph Klafter  
President, Tel Aviv University



## Turning off a Rogue Cancer Gene

**T**argeted drug therapies are frequently preferred over chemotherapy for the treatment of certain types of leukemia. These treatments home in on cancerous cells in bone marrow without destroying other organs. In some cases, however, the targeted drug therapy mysteriously causes the cancerous cells to migrate out of the bone marrow into surrounding brain and skin tissue, and to proliferate. Now, a Sackler Faculty of Medicine team – Prof. Pia Raanani, Head of the Hematology Department and of the Hematology Division at the Rabin Medical Center; Dr. Galit Granot, Head of the Experimental Hematology Laboratory; and PhD graduate Adelina Ovcharenko – has found that in these rare cases, the targeted drug treatment turns on a gene, called PYK2, which causes the cancerous cells to become more active and metastasize in nearby organs. Using cell cultures, the team has succeeded in preventing the phenomenon by turning off the gene – a finding that could have a positive impact on new treatments for leukemia.



## One Million Items on Jewish History

## Personalizing Antidepressants



**D**epression is among the major causes of disability worldwide. Studies show that the most popular antidepressants, selective serotonin reuptake inhibitor drugs (SSRIs) such as Prozac, Paxil and Cipralex, only work for 60% of the population. Now, however, TAU doctoral students Keren Oved and Ayelet Morag, under the guidance of Dr. David



Sirens pierced the air as planes rained bombs down on the young city of Tel Aviv. Houses were engulfed in flames, killing scores, displacing hundreds of families, and reducing yeshivas and synagogues to smoldering rubble. A report of this event, which appeared in the *Chicago Sentinel* in September 1940, is just one of over a million digitized pages available online as part of the Jewish Historical Press archives – a joint project of Tel Aviv University and the National Library of Israel.

The first such website dedicated to Jewish press in the world, JPress's mission is to preserve the original newspaper editions for perpetuity and make their content searchable online for free. The site already contains 45 newspapers in seven languages, including Hebrew, English, French, Yiddish, and Judeo-Arabic. JPress is now laying the foundations for developing a branch dedicated to the American Jewish press, which will involve the New York Public Library as well as New York and Columbia Universities.

"Search the site yourselves at <http://web.nli.org.il/sites/jpress/english> and be amazed at what you find," says JPress founder and co-director, TAU history professor Yaron Tsur.

Gurwitz of the Sackler Faculty of Medicine and Dr. Noam Shomron of the Sackler Faculty of Medicine and Sagol School of Neuroscience, have identified a gene that could predispose whether a patient will respond favorably to commonly-prescribed SSRIs. These antidepressants are thought to enhance mood by blocking reabsorption of the neurotransmitter serotonin in the brain, but this does not work for everyone. Moreover, it takes four to six weeks to

know if a given antidepressant drug works for an individual patient. The researchers are aiming for a blood test that will predict which antidepressant drug is best for a particular patient and enable doctors to provide personalized treatment for depression.

Between 5 to 10 percent of Israeli schoolchildren suffer from Attention Deficit/Hyperactivity Disorder (ADD/ADHD) and, more often than not, receive medication for the condition. Now, however, a study conducted by Dr. Ricardo Tarrasch of the Jaime and Joan Constantiner School of Education, together with

## Meditation in the Classroom



students at the School, has found that meditation and mindfulness techniques can significantly improve selective attention in schoolchildren. While meditation involves engaging in a mental exercise such as concentrating on one's breathing or repetition of a mantra, mindfulness involves bringing one's complete attention to the present experience on a moment-to-moment basis. The study, which was conducted among 101 schoolchildren, also found that the techniques reduced anxiety levels, improved the children's emotional mood, and helped them during periods of stress such as before examinations or when getting into fights with classmates.

Surprisingly little is known about schizophrenia. Recognized as a medical condition only in the past few decades, its exact causes remain unclear, its diagnosis cannot be backed by objective, physical testing, and its treatment by medication works less than half the time.

Now, Prof. Illana Gozes and her graduate student Avia Merenlender-Wagner, both of the Sackler Faculty of Medicine and Sagol School of Neuroscience, have discovered that an important cell-maintenance process called autophagy is reduced in the brains of schizophrenic patients. Autophagy acts as the cell's housekeeping service – cleaning up unnecessary and dysfunctional cellular components – and is essential to maintaining cellular health. But when autophagy is blocked, it can lead to cell death. “Using blood tests we showed the connection between reduced levels of a protein sup-



## Sweeping Away Schizophrenia

porting autophagy and the onset of the disease,” says Prof. Gozes, Director of TAU’s Adams Super Center for Brain Studies and incumbent of the Lily and Avraham Gildor Chair for the

Investigation of Growth Factors. The finding, published in *Nature Molecular Psychiatry*, could lead to new diagnostic tests and drug treatments for schizophrenia.



*A Heart  
of Gold*

Heart disease, already the leading cause of death in the USA, is rapidly becoming one of the top killers of men and women worldwide. Fifty percent of people who survive their first acute heart attack will die within five years. At present, heart transplantation is one of the most effective treatments, yet cardiac donors are scarce.

The research of Dr. Tal Dvir, a new faculty recruit at TAU’s Center for Nanoscience and Nanotechnology, is literally setting a gold standard in the fight against heart disease. Combining cardiac cells with nanofibers made of gold particles, Dvir and his doctoral student Michal Shevach have developed a sophisticated 3D cardiac patch that will allow doctors to one day replace damaged heart tissue. The researchers have already demonstrated the electrical signaling ability of these gold infused cardiac patches and, in the future, they plan to conduct clinical trials to test their invention on a living human heart.

# The Country Bat and the City Bat



The stereotypical dining habits of country versus city dwellers extend to the animal kingdom, says young faculty recruit and bat expert Dr. Yossi Yovel of TAU's Department of Zoology, George S. Wise Faculty of Life Sciences, and Sagol School of Neuroscience. Mounting miniature GPS devices – the smallest of their kind in the world

– on the backs of bats, Yovel and his team tracked the animals' feeding patterns over time. They noticed that while the country bats frequented the same time-tested "tavern" every night, the city bats preferred to "bar hop," flying from fruit tree to fruit tree.

Yovel explains that the story of the bats is an allegory for how big cities

influence behavior. He speculates that if country and city bats continue to follow these diverging behavioral patterns without mating with each other, they may eventually develop different spatial abilities and perhaps, thousands of years from now, become different species entirely.



## Diabetes Test Could Help Millions

An estimated 300 million people worldwide will develop adult-onset diabetes by 2025. Now Dr. Nataly Lerner of Tel Aviv University's Sackler Faculty of Medicine and her colleagues have

discovered that a simple blood test – A1c – can reveal an individual's risk of developing type-2 diabetes years before the condition appears. The findings, published in the *European Journal of General Practice*, could help doctors diagnose and treat diabetes much earlier than before, an especially important development for overweight and other high-risk groups. While the A1c test is standard for diagnosing diabetes, Lerner and her team found that A1c levels as low as 5.5 per cent may indicate increased diabetes risk – lower than the generally accepted 5.7 per cent for pre-diabetes and 6.5 percent for diabetes adopted by the American Diabetes Association and the World Health Organization. At this point, the test is aimed at screening high-risk populations rather than the general public.



# Manna on the Menu

**TAU steps up to the plate on  
global food security**

**In 2011**, opening shots were fired in a uniquely Israeli revolution, when the rising price of cottage cheese – a staple of the Israeli diet – sparked a consumer boycott that evolved into summer-long street protests focusing on a wide range of economic issues. According to Prof. Daniel Chamovitz, Director of Tel Aviv University's recently established Manna Program in Food Safety and Security, this is just one example of how, when facing the challenge of feeding the world's growing population, a veritable smorgasbord of factors must be taken into account.

By Sandy Cash



Prof. Daniel Chamovitz, whose research focuses on plant proteomics, does pro bono consultation for governmental agencies on food security. His popular science book *What a Plant Knows* was the basis for a recent TAU Coursera course that enrolled over 34,000 students from around the world.





“In the cottage cheese protests, outrage erupted because in Israel, like in most developed nations, we take the availability of affordable food for granted,” says Chamovitz, a noted plant geneticist who directs TAU’s Manna Center for Plant Biosciences and is also a teacher, science commentator and author. But soon, Chamovitz says, scarcity could be on the menu.

“Fifty years ago, the Earth’s population was three billion, and we’re up to seven billion today. By the year 2050 the population will hit nine billion. We’ll need to feed these people in an era of dwindling resources – including land, water and fertilizer – and may

also have to contend with the challenge of climate change. To produce enough culturally-appropriate nutrition for everyone, we need to create an integrated strategy that links plant science and agricultural research with economics, law, public policy, and the humanities,” asserts Chamovitz.

This integrated approach is at the heart of the Manna Program in Food Safety and Security, which puts TAU’s unique confluence of experts to work training the next generation of academics and practitioners who will focus on food-related issues. The program offers MA/MSc and PhD studies and an international summer school – all taught

in English. Scholarships awarded by the Manna Center for Plant Biosciences are helping bring international students to campus. At the same time, seed money for special projects is enabling Israeli graduate students to conduct food security-related research abroad.

The goal, writ large: to step up to the plate – and fill it – with Israeli food security leadership.

### **Manna from heaven: The Gates connection**

Reaching this goal just became a little easier, thanks to a new partnership with the Bill and Melinda Gates Foundation, the largest private charitable trust in the world. Currently supporting wheat research at the University’s Institute for Crop Improvement, the Gates Foundation is also helping TAU connect with people and organizations working to improve food security in Africa. One Gates-sponsored Ugandan wheat scientist is already scheduled to join a TAU lab.

“Tel Aviv is the only university in Israel, and one of a few worldwide, that promotes the creation and dissemination of practical strategies for food security based on a truly comprehensive academic approach,” Chamovitz says. “Research activity going on in many of TAU’s departments – not just plant sciences – is what inspired Bill Gates to become involved with us.”

### **Exporting Israeli know-how**

Along with bringing foreign scientists to the campus, the Manna Program in Food Safety and Security provides Israeli students with educational opportunities abroad. For example, Yannay Shanan, a master’s





candidate in economics, recently traveled to Nepal, together with fellow TAU graduate student Mathan Hoffmann, to evaluate the effectiveness of an Israeli aid organization's training program for local farmers.

"I worked in a hilly area called Ramechhap where villagers grow crops, but where the scarcity of irrigation sources means that many plots stay uncultivated, and many households don't grow enough to sustain themselves," Shanan recounts. "I evaluated a training program sponsored by an Israeli NGO that teaches farmers how to improve crop yields. Villagers were shown how to use natural pesticides

a great experience to design the study, and to assist in the collection of data that could help us assess the impact of this type of program on food security outcomes," he says. "It's been said that you can't fully understand developing world economies without 'boots on the ground.' Mine were, and I believe this had educational value for me personally, and was also key for creating the kind of analytical framework that will help future groups create interventions that produce measurable, positive effects."

### The science of food security

TAU's strength in the food security field was recognized nationally in May 2013, when the Israeli govern-

on an old Zionist theme. Rather than "making the desert bloom," these scientists will concentrate on "making the desert feed."

"With the world's agricultural lands largely exploited, it is vital to promote cultivation in non-traditional settings," he says. "The I-CORE provides five years of much-needed funding so that researchers can work on clarifying the basic scientific principles that govern plant adaptation – principles that can later be incorporated into new biotechnological techniques to increase food production."

A long career spent examining how plants adapt to harsh conditions made Fromm a natural choice to direct the I-CORE. "A plant's self-regulation is complex because it occurs in response to a tremendous number of input factors, from light wavelength, heat and oxygen, to the presence of pathogens," Fromm explains, adding by way of example that plant roots dynamically adjust their architecture so that they grow in the direction of water sources.

"Charles Darwin said that plant roots are like a 'small brain' and he was right. Today, the challenge is to use modern genetic tools to clarify how this small brain makes the 'decisions' that ensure plant survival," Fromm says.

### Wisdom from the fields

At TAU, plant science is not only about discovering new techniques. It is also about unearthing agricultural secrets from the distant past.

"Throughout history, farmers and breeders have been combining and selecting crop strains, in hopes that this hybridization will produce better quality crops and higher yields," begins Dr. Assaf Distelfeld, an expert on wheat genetics and genomics at the Department of Molecular Biology and Ecology of Plants and Institute for Crop Improvement. "But there's a problem: selection reduces the gene pool. With every gene-based trait strengthened,



From Left: Yannay Shanan, Mathan Hoffmann and Bijay Tripathi, agricultural coordinator of the Nepal project

and fertilizers, how to operate mini-greenhouses and how to grow crops that aren't native to the region, such as wheat. My goal was to design a study that would measure the impact of this teaching activity, to see if the training actually improves the well-being of the local community."

Shanan's investigation in Nepal put the economic principles he'd learned in the classroom to practical use. "It was

ment selected the University's Prof. Hillel Fromm to lead a new Center of Research Excellence (I-CORE) in "Plant Adaptation to the Changing Environment." This research consortium supports joint work by scientists from four Israeli universities, with TAU researchers making up the single largest group.

According to Fromm, much of the I-CORE's work will involve a new take



Master's student Moran Nave in Dr. Assaf Distelfeld's wheat field

another may be lost. Our work involves going back to older, non-domesticated wheat strains to find quality- and yield-related genes, and then reintroducing them into the wheat we grow for our food.”

Distelfeld has a track record in this field of endeavor; while still a doctoral student, he isolated a gene that controls grain protein content. “Comparing modern wheat to wild, we discovered a mutation that resulted in low protein content,” he says. “From there, we patented a process for taking the non-mutated gene – which promotes high protein content and greater nutritional value – and reintroducing it into modern varieties.”

Today, Distelfeld uses traditional hybridization methods as well as computerized gene mapping to pursue another quantitative factor: grain weight. “We’ve identified a chromosomal region linked to grain dimensions such as length and volume,” he says. “In the future, we hope to link high grain weight to specific genes that can be transferred into crops. This may not solve world hunger, but it is a small step in the right direction.”

Other TAU plant biology initiatives go beyond the optimization of crops, to address what I-CORE director Fromm terms the “tri-lemma” of balancing food, energy and the environment.

“Intensifying cultivation requires a lot of energy, so new energy sources are needed,” says Fromm. “However, biomass-based fuel from plants ties up agricultural fields needed for food production.

“In one of our studies, conducted together with experts in desert agriculture from the Arava, we are exploring the cultivation of desert trees watered with salty runoff from desalination plants as a source of biofuel. This is an example of how multidisciplinary research can lead to creative solutions for sustainability, as well as the production of more food,” Fromm enthuses.

### Food law and rights

To change society, you first have to understand it. That’s where the Food Security Program’s experts in law, the humanities and the social sciences have an important role to play.

Prof. Aeyal Gross of the Buchmann Faculty of Law believes that “food security is corollary to the recognized human right to adequate food and adequate nutrition, and is in turn inextricably linked to buying power – a power that, in many cases, is dictated by the state.

“In Israel, the poorest citizens receive welfare payments which are supposed to act as a kind of food security safety net, but don’t guarantee proper nutrition,” Gross says. “At the same time, we don’t want the government to be responsible for directly providing us with food, or for telling us what to eat.”

“Food law,” he says, “is a work in progress around the world because individual societies – through their legislatures, courts and advocacy groups – are negotiating their way toward the ultimate goal: a reasonable standard of food-buying power for all, but without

governmental over-intrusiveness.”

Prof. Gross’s colleague at the law faculty, Dr. Yofi Tirosh, affirms that “just like tax law promotes fairness in taxation, food law is a matter of justice.” But, she says, beyond promoting economic equality, “the legal profession needs to think about how the law defines and regulates our relationship to, and choices about, food.”

“For example,” she says, “the current demands of the labor market make it harder for parents to find time to shop for produce, prepare food at home and have meals with their children. How could the law contribute to more family-oriented and healthy eating habits?”

As another example, Tirosh notes the demand by the US and other governments that food producers specify the caloric value of the food they sell. “This step directs our attention to the individual consumer as a rational and informed player, while diverting it from the much-needed structural changes in the food market. Rather than focusing mainly on information, states should make sure that healthful foods are affordable to all,” Tirosh suggests.

## Scoresheet:

### Feeding 7 Billion People Today

**800 million**  
are  
**hungry**

**2.3 billion**  
are  
undernourished

**3.2 billion**  
experience  
food security

**700 million**  
are  
**overweight**

### What does the future hold?

To maintain present-day calories per capita by the year 2025,

**food availability must increase by 36%**



## Food through an historical lens

TAU historian Prof. Amy Singer believes that reaching food security objectives depends on understanding a society's past, particularly its attitudes toward proper apportioning of food and other resources. "The big question is always: Who deserves what, and at what level – the household, the town, the state or the empire?" Singer thinks that the answer to this question changes over time, depending on everything from climate and population density, to the accumulation or loss of wealth.

Singer's own research – on public kitchens that furthered social policy in the Ottoman Empire – is instructive. "We need to ask: is food security a tool for acquiring political capital? Is it a method for keeping the peace? Is it an ethical or moral value? If we understand the historical attitudes that shaped a particular society, we stand a better chance of instituting policy decisions that will work within that culture and improve lives."

To round out the multidisciplinary mission of food security, Manna Program Director Chamovitz draws attention to an additional and very im-



**"Rather than making the 'desert bloom,' our scientists will concentrate on making the 'desert feed.'"**

portant partnership – between biology and the social sciences. "Plant biologists need to understand the economic implications of what they're doing, while policy people need to understand both the limitations, and the potential, of plant biology," he says. "Working together, we can launch food security

initiatives based on Israeli scientific discoveries and make them work in developing societies around the world."

## Reviving international development

As a resource-poor country that has achieved Western-level food security success in just a few short decades, Israel has much to offer developing nations. But in reaching out, Israel also stands to benefit.



Dr. Aliza Belman Inbal

"Agricultural diplomacy is an effective bridge-building tool," says Dr. Aliza Belman Inbal, Director of the Harold Hartog School of Government and Policy's Pears Innovation for International Development Program. "In the 1960s and 70s, Israel was an international development powerhouse, sending out huge numbers of agricultural advisors to work in poverty-stricken nations, particularly in Africa," she says, adding that Israel once topped the world in terms of agricultural advisors sent to other countries. "Unfortunately, the severing of diplomatic relations with Israel after the Yom Kippur War, as well as a steady decrease in Israeli government budgets for foreign aid, has reduced Israel's stamp to just a shadow of its former self."

With food security rising to the top of the international agenda, Israel is poised to reclaim the development leadership title. "We are the 'startup nation.' We have a talent for finding

creative solutions, and we're good at the things that developing countries need most, like agriculture, water management, renewable energy, and education and communication technologies," Belman Inbal says. "The TAU Food Security Program will train people from developing countries so that they'll use Israeli knowledge as the basis for creative initiatives back home and will link Israeli researchers, entrepreneurs and professionals to their counterparts in developing countries."

Belman Inbal stresses that development work is not just agricultural altruism. "Today, the Israeli agritech sector almost exclusively focuses on high-end technologies targeting developed countries. However, the majority of arable land in the world is farmed by small farmers in low and middle-income countries. By facilitating the development of agricultural technologies and methodologies suitable to the developing world, the Manna Program could open up huge markets that combine good business with doing good. The long-term impact of the Food Security Program will rest on its ability to promote business models that combine saving the world with turning a profit."

According to Chamovitz, reaching out to developing countries goes hand-in-hand with "reaching in" to the Israeli public itself.

"One of the pillars of the Manna Program in Food Safety and Security is outreach, because we want to remind Israelis that, together, we have the ability to reclaim our place as an international development superpower," Chamovitz says. "Only one-fifth of Israel's land is arable, yet we produce an amazing 80% of all the food our population needs. That's why Israeli and TAU expertise is inspiring, and why it should be out in front all over the world."

In Irit Numa's filmmaking workshops, troubled youth dare to dream

## A Cinematic Toolbox for Personal Change



Our choices and aspirations determine the course of our lives. Yet for at-risk youth, the power to choose and dream is not always within reach. TAU doctoral film researcher Irit Numa employs the art of filmmaking to develop young people's ability to recognize their options, make choices and aspire to a better future.

"There is something about film that is therapeutic, even cathartic. By telling your story, you construct your identity, and if you don't like it you can rewrite your life or choose a new outlook," explains Numa. "Filmmaking guides people towards personal awareness and transformation."

After a decade of facilitating film workshops at community centers, Numa sought to take her work to a new, more scientific level: to create, test and assess a therapeutic toolbox for working with youth through cinema. Numa's doctoral research proposal was unlike anything the Yolanda and David Katz Faculty of the Arts had ever supported, and finding a PhD



mentor proved difficult. Her persistence led her to Prof. Nitzan Ben Shaul, who guided her toward the element that makes her work singular and potent – employing a hyper-narrative storytelling technique in her workshops.

In the hyper-narrative genre, different stories play out according to alternate choices taken by characters, in the spirit of the 1990s movies *Sliding Doors* and *Run Lola Run*. "When students work with more than one storyline, the narrative splits, and they see that if the character takes one decision it brings him to a certain end result, while if he makes another choice it leads to entirely different consequences," explains Numa.

For example, in a scenario such as, "I lent my friend 100 shekels and now she says she can't pay me back," one possible reaction could be violence, with the outcome of losing the friend, not getting repaid and being suspended from school. An alternative response

could be bartering the debt for tutoring, getting better grades and strengthening the friendship.

"The focus on *thinking about options* is unique to my approach," stresses Numa. "Students learn to take control of their lives and open their minds to choice and possibility."

Numa's academic career is a synthesis of her own choices, dreams and experiences growing up in disadvantaged neighborhoods in south Tel Aviv. She holds a BA in behavioral science, and started out working with youth in psychiatric hospitals. When the work proved too disturbing, she asked herself what would bring her happiness. Her answer was to pursue an MFA in screenwriting at TAU while working her way through school tutoring at-risk youth.

Numa's research has been supported by a Dan David Scholarship, as well as by partnerships she created with TAU's "Paths to the University," a program of the Unit for Social Involvement at TAU's Ruth and Allen Zieger Student Services Division; TAU's Department of Film and Television; and the Channel Two project "Creating with Keshet," among others.

By Lisa Kremer



Irit Numa

# One Giant Step for TAU

## SpaceIL counts down to a blue-and-white moon launch

In 1988 Israel joined aerospace aristocracy when the lift-off of a vehicle for releasing small satellites into orbit made it the eighth nation on Earth to achieve space launch capability. Now, a group of TAU graduates working at SpaceIL are harnessing Israel's scientific and technological achievement to land Israel's first unmanned spacecraft on the moon.

"Our goal is to make Israel the fourth country – after superpowers US, Russia and China – to achieve this historical milestone," says TAU alumnus Yariv Bash, an electronics and computer en-



gineer who is co-founder of SpaceIL, a non-profit organization housed on the TAU campus. The project is vying for the Google Lunar X Prize, a worldwide competition sponsored by the Google Corporation and involving a 20 million dollar cash award to the winner. But for Bash and his team – which includes some 35 TAU graduates – it’s not about the money. It’s about boldly going where no Israeli has gone before.

“SpaceIL is a typical Israeli startup, in that it relies on teamwork, dedication and creative thinking to come up with workable solutions on a shoestring budget,” says Bash. Indeed, the proposed spacecraft’s modest, barrel-like design – which looks more like a rooftop solar water heater than anything inspired by science fiction – is part of its charm. “This is a very cool and tough engineering project,” Bash says. “That’s why people want to get involved.”

### Beyond Google Earth

To win the Google prize, SpaceIL must be the first to land its spacecraft on the surface of the Moon, travel 500 meters above, below or on the lunar surface, and send live video transmissions back to Earth, all by the end of 2015. The mission is formidable, but Bash is optimistic: “Based on Israel’s space-proven satellite technology, as well as its leadership in nanotechnology and high tech, I believe we have an excellent chance of getting there first,” he says.

While many competing teams represent private companies, SpaceIL is strictly a not-for-profit endeavor. “We have 17 full-time employees and advisors, as well as 260 volunteers who come in at odd hours, keeping the project running day and night, and even over the weekends,” says Bash. He adds that the SpaceIL management is always on the look-out for additional funding to round out the limited sponsorship they receive from Tel Aviv University and other organizations.

### A high-flying team

Bash, who completed his undergraduate degree in electrical and electronics engineering at TAU, worked in government before the SpaceIL venture took off. He is no stranger to team building; in his spare time, he directs Machanet – a yearly invitation-only event where, over three sleepless days, talented young people brainstorm about cutting-edge technologies.

Still, as SpaceIL advanced past the planning stage, it became clear that the race to the finish line would require the help of a manager with a head for science. Bash and his colleagues hired Dr. Eran Privman, an expert in computer science and neuroscience who received his PhD jointly from TAU’s Blavatnik School of Computer Science and the Weizmann Institute.

Privman directed projects in the past as a combat pilot and R&D manager in the Israeli Air Force, in various positions in high tech and venture capital, and as a member of his home town’s city council. “SpaceIL is by far the most complex project I’ve ever handled,” says Privman. “On the one hand, most of the team members are volunteers – no one has a moon landing on their resume! – and on the other hand, we’re also working with very limited resources. But the talent and motivation is sky high. That’s what, I believe, will allow us to win this competition,” he adds.

### Technical challenges – and an educational mission

The technical challenges faced by the SpaceIL team are huge, but the trick, says Bash, is to go small in order to keep launch costs down. “Rather than building a massive rocket to escape the Earth’s atmosphere, our spacecraft – which will weigh only 300 lbs – will hitch a ride on a rocket launching a

commercial satellite, and only once in orbit will it fire its own jets and head toward the moon,” he explains, adding that entering lunar orbit should require about a month. Then, he says, the craft may circle the moon for as long as two weeks, waiting for the perfect time to descend to the surface – and hopefully land face-up without crashing. “A big focus of our development work is on redundancy – making sure there are back-up systems in the event that something goes wrong. After all, we only get one shot.”

While they dream of that much-anticipated trip to the sky, the SpaceIL team is promoting the project as a source of inspiration on Earth – both in Israel and around the world.

“Back in the 1960s, the Apollo moon landing had an amazing impact, turning scientists into cultural heroes and inspiring a generation of students to study math, science and engineering. This is called the ‘the Apollo effect,’” says Privman. “With SpaceIL, we’re not waiting for the landing to take place before we get the word out. Through our lectures and workshops, we’ve already reached 40,000 Israeli schoolchildren, and we’ve started working with an American NGO (the iCenter) to bring

“

“Most of the team members are volunteers – no one has a moon landing on their resume!”

word of what we’re doing to Jewish children in the United States,” says Bash.

“Not only is this a great way to connect Jews all over the world with Israel in the context of a positive image, we’re also breaking the ‘glass ceiling’ in terms of science and education. We’re saying: ‘look at what we’re doing – this could be you!’ If even two or three percent of the kids we reach take up the challenge, we’ll have accomplished far more than just a trip to the moon,” Bash concludes.

By Sandy Cash



Lautman alumna Marva Shalev-Marom took her studies out of the classroom to create an academic outreach program for Ethiopian youngsters

# Learning with Heart and Soul

With graduates ranging from writer Etgar Keret and *Bethlehem* director Yuval Adler to master chef Yotam Ottolenghi and influential linguist Ghil'ad Zuckermann, TAU's Adi Lautman Interdisciplinary Program for Outstanding Students encourages social consciousness combined with intellectual ambition

Every Tuesday, 60 students in TAU's Adi Lautman Interdisciplinary Program for Outstanding Students gather together to deliver lectures on their unique research projects. The weekly ritual provides a fun and stimulating platform to learn about diverse fields of study. At the start of each session, students raise a compelling question, such as: How are Rosa Parks and Elie Wiesel

related? What does Hebrew have to offer the aboriginal languages of outback Australia?

Fifteen out of 8,000 incoming freshmen are accepted into the prestigious program every year following a rigorous selection process. They receive free tuition for the entirety of their studies. The four-year direct MA program not only allows but strongly encourages students

By Tiffany Roberts and Judd Yadid



to take courses from across the university's nine faculties.

Prof. Na'ama Friedmann, Head of the Lautman Program, describes the program's ideology: "Established in 1987, the program was truly ahead of its time. The idea of giving students free reign to fashion their own degree program was unheard of, especially in Israel with its rigid departmental curricula."

Under the guidance of Prof. Friedmann and dedicated mentors, students devise a customized, inter-departmental study curriculum to suit their research interests. "One student is investigating 'moral courage,' which entails taking courses from philosophy, sociology, psychology, anthropology and biology, and another is interested in the influence of meditation on those with disabilities – a research area that involves psychology, Buddhism, education, neurobiology and medicine. In short, these subjects require an interdisciplinary approach," says Friedmann.

Approximately half of the Program's 350 graduates have gone on to become tenured academics, while the other half have pursued careers in high-tech, biotech, literature and the arts.

### Learning in the age of Google

Fluent in Hebrew, English, Sanskrit and Japanese, Marva Shalev-Marom, one of the program's most recent graduates, is intrigued by everything from African culture and psychology to the Mishnah and Zen Buddhism. It was her diverse passions that convinced her to apply for the Lautman Program. Despite being accepted into an American Ivy League college, Marva chose TAU because she liked its comprehensiveness: "You enter the door and have no idea where you will end up. I felt that the Lautman Program granted me freedom."

"Some people doubt the relevance of academic studies in this day and age," continues Marva. "You have 'Professor Google' to answer all of your questions. However, education is not simply about information. Knowledge has a vitality that information alone does not; it moves you to take action. All of the Lautman students are going in completely different directions. Most are extremely socially active and do not fit into the stereotype of academics who are disconnected from reality."

### Tikkun Olam in action

During her army service, Marva taught music to at-risk Ethiopian youth in the southern towns of Gedera and Sderot, and organized community concerts and story nights.

Later, together with TAU's Dr. Ran Cohen – a mentor in the Lautman Program who was recently awarded the Tchernichovsky Prize for his exemplary translation of a sacred Ethiopian text – Marva established a special academic outreach program, sponsored by the Lautman Fund, to bring Ethiopian-Israeli high school students to the TAU campus. "We want to help high school students living in the periphery to realize that the academic world is not as far away as they may think," explains Marva.



**ETGAR KERET**

"When I first arrived at Tel Aviv University, I didn't have any real focus. The Adi Lautman Interdisciplinary Program allowed me to study different disciplines, such as math, philosophy and sociobiology, side by side. This was a unique gift. It was during these years that I began writing more and publishing, and I believe that the chance I was given to immerse myself in different ways of thinking is what helped me find my way as an artist."

– Etgar Keret, Israeli writer and filmmaker

As for the future, Marva aims to pursue a PhD at Columbia University, specializing in Indian Buddhism. She will not go, however, until she has finished her music outreach project: "I believe in music as a tool of social justice and, for me, Tikkun Olam is a lifetime mission."

### IN MEMORIAM

TAU pays tribute to the memory of Dov Lautman, one of Israel's foremost business leaders and philanthropists and former Chairman of the TAU Executive Council. An Israel Prize laureate and TAU honorary doctor, Mr. Lautman dedicated the Adi Lautman Interdisciplinary Program for Outstanding Students as well the Adi Lautman Special Program for Outstanding Students in honor of his late son, Adi. In recognition of his staunch commitment to youth education and outreach, the Dov Lautman Unit for Science Oriented Youth at TAU was named in his honor.



1936 – 2013

When Drs. Ariel Munitz, 39, and Udi Qimron, 39, joined the Department of Clinical Microbiology and Immunology at TAU's Sackler Faculty of Medicine on the same day in 2009, they were pleasantly surprised to discover they had known one another at Yeshiva High School (*Netiv Meir*) in Jerusalem.

Fresh off the plane from post-doctoral studies in the United States – Ariel from the Cincinnati Children's Hospital and Udi from Harvard – they were excited to be taking up research positions at their university of choice and to resume their friendship in the process.

Five years later, Ariel and Udi have impressive research accomplishments under their belts and are considered trailblazers in their fields. Both have published in the world's most prestigious scientific journals – Ariel in *Nature Immunology* and Udi in *PNAS (Proceedings of the National Academy of Sciences)*. Both have made breakthroughs that could pave the way for new, life-saving medical therapies.

The two knew they wanted to return to Israel for their academic careers and chose Tel Aviv University over

other Israeli research institutions: "The medical faculty here is flourishing and we wanted to be part of this vibrant research community," says Ariel.

"There's a real emphasis here on academic freedom," says Udi. "Right from the outset we were given complete independence. This allowed us to pursue creative research directions and encouraged us to grapple with tough scientific problems."

"Of course, there are academic commitments and regulations here, but no one's telling you that in order to achieve a certain goal, you should do this or that," adds Ariel. "The type of autonomy they allow us here fosters independent and creative thinking."

Since joining TAU, the two have become close friends – both on and off the campus. With offices on the same high floor of the Sackler School

# A Tale

of Medicine building, they eat lunch together every day while enjoying the view out over Tel Aviv and discussing their lives, research and future goals.

## "Positive competition"

Quoting from an old Talmudic saying, "when writers vie, wisdom mounts," Ariel and Udi say that the positive competition between them spurs them on to greater results. "We're not in direct competition; I'm focused on immunology research and Udi on microbiology," says Ariel, "but if one of us gets a study published then it's an incentive for the other."

Udi was one of 16 TAU researchers to win prestigious European Council Research (ERC) grants over the last year. "The 1.5 million euro grant will help me determine my research path for the next five to ten years," says Udi. "It will generate spin-off projects from my current research."

Ariel's research is supported by the Fritz Thyssen Foundation, the Israel Science Fund, Israel Cancer Research Fund and the Binational Science Foundation. "Now that Udi's got an ERC grant, I want one too," he says amiably.

The relationship between the two extends beyond competition and camaraderie, however, as they delve into one another's research and exchange valuable ideas and insights.



▶  
Dr. Ariel Munitz (left) and Dr. Udi Qimron face off

# of Two Recruits

**It's well known that rising through the ranks in academia can be fiercely competitive. But positive competition between colleagues can bring about greater results, say two TAU researchers**

## Wrangling the immune system

Ariel and his team have developed a new method for treating chronic inflammatory diseases. "The immune system is a double-edged sword," says Ariel. "While its primary role is to fight infections, it can also become overactive, leading to problems like asthma and autoimmune diseases." Ariel and his team have discovered a powerful mechanism that keeps the inflammatory cells from going rogue – a breakthrough that could lead to effective treatments for asthma, blood disorders and cancer.

"I'm combining the expertise I gained in my PhD studies in pharmacology together with my post-doc research in immunology," says Ariel. "By identifying the inhibitory mechanisms that restrain inflammatory cells, I can potentially harness them in fighting disease," says Ariel.

## A substitute for antibiotics

Tackling a different problem – that of bacterial resistance to antibiotics – Udi uses viruses to kill pathogenic bacteria. He and his team have succeeded in isolating a viral protein that prevents bacteria from dividing, thereby destroying them and combating infections. The discovery is currently being patented

and could lead to the development of a novel type of antibiotic.

While both scientists are developing game-changing concepts, the two admit that they think in entirely different ways. "The immune system Ariel deals with is extremely complex," says Udi. "In contrast, I target the simplest

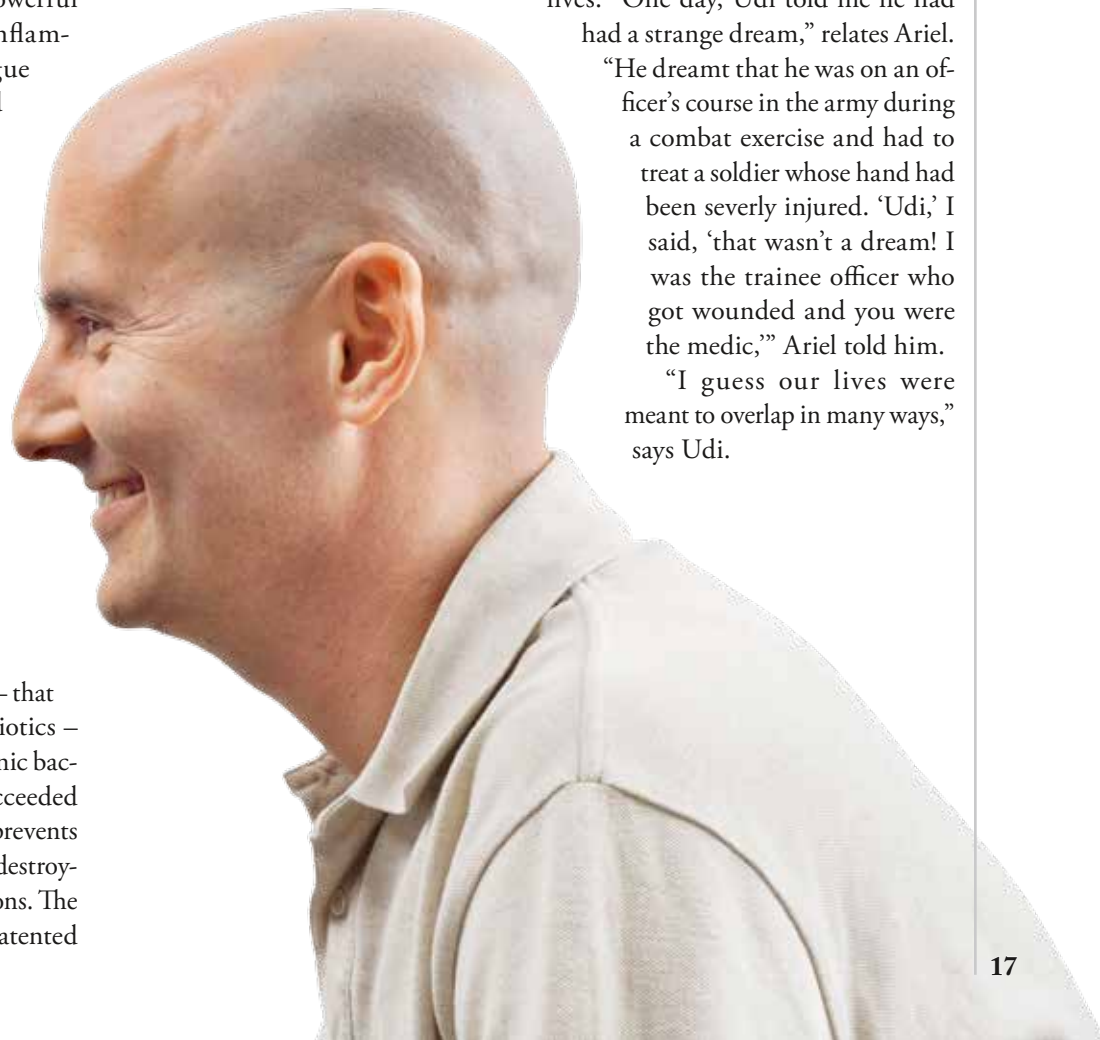
systems in nature such as the virus I'm working on."

Ariel jokes, "That's why it takes me three years to publish, while Udi can publish three papers in the same time frame."

After two years at TAU, the two accidentally discovered that they had crossed paths in another episode in their lives. "One day, Udi told me he had had a strange dream," relates Ariel.

"He dreamt that he was on an officer's course in the army during a combat exercise and had to treat a soldier whose hand had been severely injured. 'Udi,' I said, 'that wasn't a dream! I was the trainee officer who got wounded and you were the medic,'" Ariel told him.

"I guess our lives were meant to overlap in many ways," says Udi.





# A Safer Cyber Future

With over 43 billion cyber-attacks per day, the race is on to develop the most foolproof security technologies

**W**hat if a hidden microphone placed next to a laptop could steal its encrypted data? Or a terrorist organization could hack into the national electricity grid and shut it down? These scenarios are far from science fiction. They are just some of the potential attacks that threaten cyber space and could seriously damage the networks we rely on to communicate and travel, power our homes, run our economy, and provide essential government services. As the number of mobile users, digital applications and data networks increase, so too do the opportunities for exploitation.

At TAU, some 30 groups across five faculties are integrating computer science, engineering and national security studies to advance cyber research and transfer their knowledge to decision makers in the government and to commercial security technology firms.

“In the ongoing cyber war, the best form of defense is pioneering technology,” says Prof. Yossi Azar, Head of TAU’s Blavatnik School of Computer Science. “At TAU we have one of the strongest and most diversified cyber teams in Israel.”

TAU researchers are conducting projects in fields ranging from doomsday cryptography, secure cloud computation and more efficient verifiability, to data anomaly and malware detection, user-controllable privacy, and recognition technologies for video surveillance.

The University is also establishing a national cyber center, partially funded by the Israeli Prime Minister’s Office, for coordinating interdisciplinary study programs, research, policy analysis, industry partnerships and international collaborations in the field of cyber security.

### Flipping the nation’s switch

One of the more ominous scenarios for a government is a cyber-attack by a terrorist group or rogue state on the national electricity grid. This could potentially bring a nation to its knees, causing large-scale damage to life, property and essential services.

Prof. Avishai Wool of TAU’s Fleischman Faculty of Engineering is developing a system that could help identify potentially malicious intrusions on the grid and prevent them.

“Twenty years ago, if you wanted to shut down the power system you had to attack it physically,” says Wool. “Today it’s quite plausible that an attacker armed with nothing but a computer and network connection could hack into the power system or cause an explosion in a chemical plant. This

has now become a white-collar crime – you can do it without being detected or getting your hands dirty,” he says.

Using TAU’s own independent electricity grid as a live experimental model, Wool’s system automatically evaluates the communications patterns on the grid and flags those incidents that are normal and those that are potentially malicious. The technique’s advantage is that it achieves a far lower false alarm rate than other known systems.

### No entry!

If shutting down the power grid sounds threatening in the abstract, a more concrete and everyday threat is one that could block access to popular websites – whether banking storefronts or consumer sites.

If, for example, an online gaming site wants to block access to a competitor’s site, all they have to do is bombard that site with traffic until its servers crash under the load. Known as “distributed denial of service” (DDoS) attacks, their source is almost impossible to identify.

Now, Shir Landau-Feibish, a doctoral student in computer science under Prof. Yehuda Afek of the Blavatnik School, has developed a unique tool for revealing the footprint of certain DDoS attacks and preventing them from being repeated. To do so, her team, in cooperation with Prof. Anat Bremler-Barr of the Interdisciplinary Center in Herzliya, has devised a “double heavy hitters algorithm” that is capable of finding the smallest set of signatures – digital codes identifying the sender – required to detect 99% of the attack messages.

Landau-Feibish explains that about 20% of the world’s computers are part of a botnet – armies of zombie computers that are controlled by an attacker who can direct high volume traffic to a targeted site. These strikes fly in under the radar because they come from multiple computers and appear normal.

“Regular computer security compa-

nies need time to sift through the traffic to find what’s illegitimate. Meanwhile, your site is gridlocked and you’re losing your customers,” Landau-Feibish says.

The TAU algorithm is innovative in that it can be applied to extracting malicious signatures from textual data as well as numerical data. The disruptive messages can then be blocked. “When our system is installed on the security company’s mitigation devices, it’s on call rather than the company being on call,” she says.

The research is supported by the Kabarnit-Cyber Consortium under the Magnet program, funded by the Chief Scientist of the Israel Ministry of Industry, Trade and Labor.



Shir Landau-Feibish



### Letting big data do the work

Of the half a million attacks per second occurring in cyber space, the majority can’t be detected by traditional computer security systems, says Prof. Amir Averbuch of the Blavatnik School of Computer Science. Traditional defense systems that work by scanning the contents of computer files and cross-referencing their contents with the “code signatures” belonging to known viruses are ineffective, as are rule-based systems such as firewalls, notes Averbuch.

“These systems don’t catch ‘zero-day attacks’ – ones that exploit unknown software vulnerabilities. They can only detect yesterday’s attacks – ones they know they’re looking for,” says Averbuch.

Today, communications networks and social media are accumulating huge amounts of data. Google and Facebook each amass two terabytes of compressed data a day. “The challenge is how to extract intelligence from big data. It’s a hot topic,” says Averbuch.

The TAU team has developed a program that enables big data to generate the algorithms that detect anomalies in zero-day attacks. The algorithms are based on a randomized scanning of the data and are therefore not biased by any foreknowledge. “We try to ascertain the geometry of the data and then understand who is deviating from normal behavior. We then perform a forensic investigation on this abnormality to see whether it’s malicious or not,” says Averbuch.

### In the cloud

Increasingly, companies and organizations are outsourcing their computer operations to the cloud, especially large service providers such as Amazon. The cloud is cheaper and faster, but is it secure?

“Not so,” says Dr. Eran Tromer of TAU’s Blavatnik

School, a specialist in cloud computing. “Data entrusted to the cloud may be corrupted or leaked, either by the cloud service provider or by malicious customers.

“The research challenge is to construct verifiable mechanisms that base the security of remote computation on mathematical evidence rather than sweet promises,” says Tromer.

Collaborating with MIT and the Technion, Tromer’s team is developing

## NEW BROADCOM FOUNDATION FUND

A two-year program promoting multidisciplinary research in cyber security was established at TAU by the Broadcom Foundation. The program brings together researchers from Broadcom and students and senior scientists from TAU toward the development of a new generation of authentication methods that will enable secure interaction between users and their digital environment. Dr. Henry Samueli, Broadcom Co-Founder, Chairman and CEO, says, “This new, unique program will enable us to forge a deeper alliance with academia and with the proven creativity, innovation and quality of Israeli science and technology.”

a “SNARK” – software that compiles computer programs into a more secure version and that ensures integrity of computation by associating data with succinct mathematical proof of its validity. This could be a game changer in the field of computer security, Tromer believes.

In a spinoff project with Johns Hopkins University, Tromer and his team are developing “Zerocash,” a system that ensures anonymity in digital currency transactions such as Bitcoin, while again ensuring validity. Tromer’s research is supported by TAU’s Check Point Institute for Information Security, the Israel Ministry of Science, the I-CORE for Excellence in Algorithms and the Leona M. and Harry B. Helmsley Charitable Trust.

### On the policy front

The cyber domain has brought to the fore complex security and policy-related challenges. TAU has taken a leading role in addressing these issues through the Yuval Ne’eman Workshop for Science, Technology and Security. In 2011, Workshop Head Major Gen. (res.) Prof. Isaac Ben-Israel was approached by Prime Minister Benjamin Netanyahu to review Israeli national cyber policy. Ben-Israel submitted a report, adopted by the government, that included setting up a new National Cyber Bureau. Foremost among Ben-Israel’s recommendations was to position Israel as

one of the top five global powers in cyber expertise by 2015.

Ben-Israel feels that “innovative technology against cyber-attacks is not enough without some sort of government involvement and regulation. As cyber warfare becomes a national and societal problem, there is a need to advise decision-makers on the formulation of standards. This is where you need the input of policy experts, ethicists, economists and human rights specialists.”

The Workshop conducts research in the cyber sphere and holds a high-buzz annual conference on cyber security. Last year’s conference brought together key figures from Israel and abroad and hosted President Shimon Peres and Prime Minister Netanyahu.

Yuval Ne’eman Workshop Research Associate Lior Tabansky, a PhD candidate in political science under Professors Ben-Israel and Azar Gat, says, “Cyber-attacks bypass the whole apparatus of borders, armies and traditional infrastructures that are supposed to protect society. Maybe in in ten years’ time we’ll be able to build borders in cyber space as well. Meanwhile, we can try to understand the often neglected social and political aspects of cyber security and engender new perspectives in the humanities and social sciences.”



Dr. Eran Tromer

**H**agar Weinberger – a fifth-year PhD candidate who enjoys flying remote controlled airplanes in her spare time – observed that doctors and other health professionals have little training in how to handle the stress of the job and make responsible decisions.

“Imagine as a doctor that you are nearing the end of a long and emotionally-draining night shift. You’re exhausted and overworked,” explains Hagar. “Nevertheless, you are expected to give each new patient your full attention and be kind, patient and understanding at all times. Society demands perfection from physicians, but there are currently no tools available to teach them how to properly cope with these multifarious pressures and behave professionally.”

Hagar’s research, conducted under the supervision of Prof. Yechiel Michael Barilan of the Sackler Faculty of Medicine, responds to this pertinent need. She is developing guidelines – to one day be used in education manuals for physicians – that address major ethical issues, such as how to make moral judgments under stress; how to balance between the desire to innovate and the need to follow protocol; and how to accept blame but live without guilt. Combining sociology, psychology, medicine and philosophy, Hagar’s work could also have applications for the military, where leaders are expected to conduct themselves professionally under duress.

### Reading Maimonides over hummus

As an Edmond J. Safra Fellow, Hagar is deeply involved in the activities at the Edmond J. Safra Center for Ethics. Once a week, she attends a colloquium at the center with other doctoral students, post-docs and faculty members, in which they read and debate classical and modern texts over hummus and pita. Past sessions have explored multifaceted issues such as how to define consent, the ethics of abortion and



Hadar Weinberger

## The Good, the Bad and the Ethical

Hagar Weinberger, who wants doctors to make better moral judgments, is among the first group of fellows at TAU’s Edmond J. Safra Center for Ethics

ethanasia, and the uses and misuses of placebos. In addition to the weekly colloquium, the Center hosts forums for researchers and professionals throughout Israel. For example, a group of 13 experts in the fields of social sciences, medicine, health and law began meeting in 2013 to discuss Israel’s vaccination policy. Another group comes together on a monthly basis to pore over new research involving ethical decision making. International scholars are also invited frequently to give talks.

“The mission of the Edmond J. Safra Center for Ethics is to promote

new ways of thinking and to encourage dialogue between researchers and professionals from diverse backgrounds,” explains center director Prof. Shai Lavi. “We are addressing the growing need for ethical deliberation in Israel.”

*The Edmond J. Safra Center for Ethics at TAU is named after the late Edmond J. Safra, one of the 20<sup>th</sup> century’s most prominent bankers and philanthropists. The Center was dedicated by his wife, TAU Honorary Doctor Lily Safra, in 2012.*



Prof. Shai Lavi

By Tiffany Roberts

After one season of disappointing rainfall, Israelis pay more at the vegetable market and feel guilty taking long showers. Imagine how they would cope, however, if the drought continued for decades or even centuries.

TAU scientists have pinpointed such a period of harsh climatic conditions that began around 1200 BCE and parched the Mediterranean region for 150 years. Holding the key to this discovery is fossilized pollen, which when analyzed revealed a marked decrease in the number of oak trees, pines and cultivated olive trees for that period.

“Pollen grain is the most durable organic substance in nature. It can be preserved for hundreds of thousands

Institute of Science, project scientists employ micro-archaeological techniques to reveal material evidence for historical processes. Scientists such as Langgut work in the field, homing in on excavation layers most likely to yield microscopic evidence and setting up field labs to provide real-time analyses.

Explains Finkelstein, Jacob M. Alkow Professor for the Archaeology of Israel in the Bronze and Iron Ages and 2005 Dan David Prize laureate: “Introducing a field lab creates tight cooperation between exact and life scientists and archaeologists. When I need sediment analyzed, I no longer have to relay samples to a lab somewhere and wait days or weeks for answers. Within a few hours, sometimes minutes, I have information that can change the direction of the dig.”

For the drought study, Langgut extracted pollen from layers unearthed deep below the Sea of Galilee and the Dead Sea. Pollen research in Israel is difficult due to the hot climate and meager quantities, and Langgut developed specialized extraction techniques to protect every grain. Material evidence provided by the grains corresponded with ancient documentation of barren fields and rising food prices. The

findings plausibly answered a question that Finkelstein and the archaeological community have puzzled over for years: What caused the domino collapse of the mighty Pharaonic, Mycenaean, Hittite and Ugaritic civilizations 3,000 years ago?

of years and provides evidence of vegetation in ancient sites,” says Dr. Daphna Langgut, a researcher at the Sonia and Marco Nadler Institute of Archaeology and Curator of Palynology and Archaeobotany at TAU’s Steinhardt National Natural History Museum and Research Center.

Langgut is one of more than 40 exact and life scientists working alongside archaeologists in a sweeping multi-year research project, supported by the European Research Council (ERC), aimed at reconstructing life in ancient Israel. Led by Prof. Israel Finkelstein of the Nadler Institute in partnership with Prof. Steve Weiner of the Weizmann

**What happened, where, when?**

Langgut’s findings of a 150-year-long withering drought would have fallen through the cracks of time if not for her high-resolution sampling method and rigorous radiocarbon dating procedure. Traditionally, sediments are sampled from layers 200 years

apart, but Langgut examined 40-year intervals for the period from 3500 to 500 BCE.

Prof. Finkelstein stresses, “Without an accurate date, we have nothing. Archaeologists cannot use what is recovered in the field to reconstruct the bigger picture without knowing when an event occurred.”

In order to better understand the trade relations and economy of ancient Israel, project scientists sought to synchronize the Levant timeline with the chronology of the larger Mediterranean basin. They worked in cooperation with excavators at three Greek sites.



▶ On-site science lab



Prof. Israel Finkelstein



▶ Dr. Daphna Langgut  
Insert: microscopic pollen







# Ancient Israel under the Microscope

A multidisciplinary team is unlocking secrets about ancient Israel held for thousands of years in microscopic remnants

Comparing the Greek findings with those at Israeli sites, Finkelstein's team succeeded in dating layers from thousands of years ago to within 30 years of accuracy.

## Why did the pig become *traif*?

Like pollen, bones hold material evidence that can answer sweeping questions. *Leviticus* and *Deuteronomy* proscribe the consumption of pork by the children of Israel. But when and why did the pig become taboo? Dr. Lidar Sapir-Hen, Director of the Archaeozoology Lab at the Nadler

Institute and Collection Manager of Archaeozoology at the Steinhardt Museum, analyzes animal remains to understand ancient husbandry and dietary practices.

Historians theorize that the Israelites avoided eating pork to distinguish themselves from their neighbors, especially the hated Philistines. But Sapir-Hen's analyses of pig bone remains tell a different story.

In the kingdom of Judah, the capital of which was Jerusalem, archaeologists have not recovered any pig remains. Surprisingly, however, bone findings

from the 8<sup>th</sup> century BCE reveal that the inhabitants of the kingdom of Israel avidly raised pigs for consumption. It is known that people from Israel fled to Judah on the heels of an Assyrian invasion in the late 8th century BCE. The pig taboo may have come into being a short while later, not to distinguish between Israelites and Philistines but between the residents of Judah and the refugees from Israel – defining status and culture rather than ethnicity in a time of turmoil.

## Tracks of human and animal migration

Material evidence is also found in ancient DNA, which tells about origins of populations, migrations, genetics, epidemics and more.

"In my work, I zoom in on the molecular level and zoom out to see the big picture," says Dr. Meirav Meiri, a postdoctoral fellow at the Steinhardt Museum and an expert on age-old DNA.

Through painstaking investigation of DNA from modern-day boars and ancient remains, Meiri found that the wild boars of Israel, in contrast to populations from neighboring countries, have a European pedigree. Remains from 4,000 years ago display a local genetic signature but, from about 3,000 years ago and onward, the European genetic signature becomes apparent. Researchers concluded that the introduction of European pigs to the Levant could have commenced with the migration of the Philistines, and continued in Roman and Crusader times. These pigs eventually replaced the local boar population.

Regarding future research directions, Finkelstein says, "For climate research and ancient DNA analysis, this is only the beginning. The sheer size of this project has nurtured many wonderful young researchers. The impact will be felt for years to come as we continue to ask questions and they continue to find answers."



## The Indo-Israeli Love Affair

Indian students share their first impressions of Israel and TAU

Travelling from his quiet village in northern India to Tel Aviv University, Rajeev Kumar, 27, felt his first wave of culture shock as he stepped off the plane into the land of milk, hummus and all-night coffee shops. “Everything was new to me – the food, the language, the pace of life. It was exciting yet overwhelming at the same time,” he recalls. As Rajeev struggled to carry his overstuffed suitcase up the steps to his dormitory room, a burly Israeli student suddenly came from behind, grabbed the other end of the bag and walked with him the rest of the way. “At this moment, my fear of being a stranger in Israel vanished, and I felt at home.”

Rajeev recently began his studies in TAU’s new International Electrical and Electronics Engineering BSc Program, which offers overseas students a world-class education in the heart of Israel’s own silicon valley.

Engineering has always been Rajeev’s passion. “I believe that engineers can help solve the majority of the world’s crises, such as food and water shortages. The key is developing new technologies – an area in which Israel excels,”

Rajeev explains. Israel’s ingenuity and its ability to thrive despite limited resources is what initially drew him to the BSc program.

Rajeev dreams of one day opening a programming company in his home town, a place where jobs are scarce. “I want to stop brain drain from the villages to the metropolitan cities. I know it is not easy starting up a company, but I am extremely committed. My TAU education will help me achieve this goal.”

### When Tel Aviv met Hindustan

Over the past five years TAU has increased its Indian student body three-fold. It has also sought more India collaborations. These include an agreement between Indian giant Tata Industries and Ramot – the University’s tech transfer company – to fund TAU technologies with commercial potential.

TAU also pioneered the India-Israel Forum in 2007, in collaboration with the Confederation of Indian Industry (CII) and Aspen India. This annual conference series, which brings together economic and academic leaders from India and Israel, has been highly suc-

cessful in creating friendships and partnerships.

### Embracing Israeli *chutzpah*

Bhawna Singh, 36, had no trouble adjusting to the honest, straightforward mentality of Israelis. She explains that people approach you on the street to offer their unsolicited advice in India as well. “For me it was refreshing, and I found it easy to get close to people in Tel Aviv. Both cultures are very family-oriented,” she notes.

A recent graduate of TAU’s Sofaer International MBA Program, Bhawna chose TAU for its extensive networking opportunities. She plans to use her contacts from the program to build her own IT business in India.

### Cyber fever

Vishal Dharmadhikari, 21, a native of Pune, India, who has also lived in Botswana and South Africa, admits that he did not know what to expect in Israel. “My main exposure to the Holy Land came from the media, which portrays Israel as a dangerous place. I was surprised by how safe I felt walking around,” he recounts.

Motivated by Israel’s prowess in the fields of counterterrorism and cyber security, Vishal enrolled in TAU’s International Master’s Program in Security and Diplomacy. During his studies, Vishal organized a special event called “India-Israel Cyber Security Connect,” which was part of TAU’s Yuval Ne’eman Workshop for Science, Technology and Security. His event dealt with the need for greater cooperation between the two countries at a time when both India and Israel face increasing threats of cybercrime.

The success of the event inspired Vishal to found his own start-up company in Pune called India Cyber Connect, which aims to strengthen cyber security in India by creating cross-border partnerships.

New technologies arising from university-based research are typically at the earliest stage of development and require a major cash infusion to be refined, tested and validated. If funding does not appear in the right place at the right time, discoveries with promising commercial potential may never make it out of the lab. Recognizing this “development gap,” two TAU benefactors and honorary doctors – Miles Nadal and Stewart Colton – are supporting nascent technologies with commercial promise.

Administered by Ramot, the University’s technology transfer arm, seed money for projects is funded through the Miles S. Nadal Institute for Technological Entrepreneurship and the Colton Family Next Generation Technologies Institute.

A deep belief in fostering innovation led Miles Nadal, a Toronto-based media mogul, to found the Nadal Institute in 2012. Since then, the Nadal and Colton Institutes have joined forces and provided seed money for projects in medical microscopy, cancer and Alzheimer’s disease. Three additional projects in the fields of engineering and energy have recently been approved for funding.

The Colton Institute was established in 2006 by Stewart Colton, Vice Chairman of the TAU Board of Governors and member of the AFTAU Board of Directors, and his wife, Judy Colton, a TAU Governor. The family’s active engagement with the university spans several decades and extends to the Colton Scholarships and the Stewart and Judy Colton Chair in Legal Theory and Innovation.

To date, the Colton Institute has funded 15 projects in agriculture, drug delivery, cell therapy, medical tools and pharmaceuticals. Of these, five have led to licensing agreements, while others are currently under negotiation.

Dr. Tamar Raz, VP for Marketing and Strategy at Ramot and a former Colton Fellowship recipient herself, says, “We are thrilled to have these sources of funding that enable us to bring to the table more mature technologies and ensure

## NADAL AND COLTON INSTITUTES

# The Seeds of Innovation Bear Fruit



Stewart and Judy Colton



Miles Nadal

that fair valuation is obtained in the technology transfer and licensing process. Through these funds the donors are ultimately helping the University bring in revenue, which is, in turn, plowed back into the TAU research enterprise. In this way, the funds are perpetuating a continual cycle of research.”

## THREE SUCCESS STORIES

- A nano drug delivery system for treating cancer developed by Prof. Ronit Satchi-Fainaro of the Sackler Faculty of Medicine has led to an agreement with Rosetta Genomics for sponsored research.
- A non-invasive device that detects the gender of chicken eggs for agricultural purposes has led to a licensing agreement with the Israeli startup Egg Detect. The inventors are Prof. Eyal Ben Dor of the TAU Department of Geography and the Human Environment and Prof. Israel Rozenboim of the Hebrew University of Jerusalem.
- A new, nano-based treatment for Gaucher’s disease has led to an option for sponsored research by a giant pharma company. The technology was developed by Profs. Mia Horowitz and Dan Peer of the George S. Wise Faculty of Life Sciences.



**PROFILE: FELIX POSEN**

# Journey toward Jewish Identity

What began as a personal quest by Felix Posen turned into a robust educational vision, culminating in the flagship Ofakim program at TAU

 Felix Posen receiving a TAU honorary doctorate in 2006

Felix Posen has a passion – Judaism as culture. It is a passion that has fueled him for over 30 years and has led him to become one of the most prominent global figures in advancing the teaching of Judaism as a living heritage. This mission also led him to establish, together with his son, Daniel, the *Ofakim* (Horizons) Program at TAU, the only teacher training program in the world to equip teachers with the full set of tools they need to educate Israeli schoolchildren about Judaism as a culture and civilization. This year, the program is celebrating its 10th anniversary and a decade of success – with about 10,000 Israeli pupils taught by Ofakim graduates so far.

Born to an Orthodox Jewish family in pre-World War II Germany, Posen and his family escaped to England and later to America shortly after Kristallnacht in 1938. It was after graduating from university, “and discovering some ghastly details about Auschwitz from a first cousin survivor of the camp,” Felix Posen recounts, that he decided to transition from an Orthodox, observant Jew to a secular one. He subsequently embarked on a personal intellectual journey to gain knowledge and redefine his identity within a new secular, Jewish cultural framework.

Posen became acutely aware that, while the majority of Jews around the world defined themselves as secular, this large population was, for the most part, uneducated in Jewish history, philosophy, literature and culture. In addition,

academic programs teaching Judaism as culture were lacking, and discourse practically non-existent.

### Broadening horizons

Posen’s success in commodities trading enabled him to embark upon pioneering philanthropic ventures to make Judaism more accessible and inclusive for the non-religious majority. He founded the Posen Foundation in the early 1980s to promote education in the new field of Jewish culture and its diversified contribution to the world through personalities ranging from Spinoza, Mendelssohn and Ahad Ha’am to Woody Allen. The Foundation exclusively funds the Ofakim Program at TAU, as well as international programs, research, fellowships, events and scholarships.

Ofakim pursues a holistic and comprehensive approach to training Jewish studies teachers in Israel. The program enables participants to explore the idea that while Jewish civilization has always included religion, it is not limited to matters of spirituality. Students are awarded tuition scholarships and living stipends, and graduate with a BA and a teaching certificate.

Ofakim has become, in ten short years, one of the most prestigious teacher training programs in Israel. It encompasses the spectrum of cultural studies relating to the Jewish experience, including art, philosophy, philology, history and Jewish literature.

**Lior Sibony**, Ofakim graduate, teacher and coordinator of Jewish Studies at Herzliya Hebrew Gymnasium, Tel Aviv, and at the Adelson Educational Campus in Las Vegas

“The Ofakim program shaped my personality, and emphasized the importance of Judaism as culture as a school subject, a tool for life and a very important value for ensuring the character of Israeli society and the future of the Jewish people.”



“Ofakim accepts only the top students who show both significant academic potential together with a profound desire to teach and become leading educators in Israeli high schools,” explains program head Prof. Ron Margolin. “Many of our graduates are becoming leaders within their pedagogical environments and communities.

“There can be no doubt that the idea of cultural Judaism is gaining ground in Israeli society with every class taught by an Ofakim graduate,” says Prof. Margolin.

“The care, involvement and enthusiasm shown by Felix and Jane Posen, and their son, Daniel, for Ofakim is simply extraordinary and shows a profound aware-



Daniel Posen

ness of the crucial importance education has in shaping a better and more just Israeli society,” Prof. Margolin stresses.

Recognizing Felix Posen’s vision and commitment, the University bestowed upon him in 2006 an honorary doctorate.

Felix Posen sums up his aim: “It is our hope that Ofakim will produce a cadre of teachers who will instill in the mainstream secular student a pleasurable and intellectual understanding of the immense richness of Jewish culture, history and development over two millennia. Secular students must have

the same rights and resources to learn about their culture as their religious peers.”

#### PROFILE: PROF. FRANÇOIS HEILBRONN

## Vive la France

A passion for TAU and Israel, combined with vitality and charisma, characterizes French Friends President Prof. François Heilbronn



Prof. François Heilbronn

Since taking up the presidency of the French Friends of Tel Aviv University in 2003, Prof. François Heilbronn has left an indelible mark on one of the University’s most successful, cohesive and loyal Friends associations.

With over 1,200 members, the French Friends Association has flourished under Heilbronn’s leadership. He has brought in many young members as well as an extensive network of contacts in the academic, public and business spheres. The Association has dramatically augmented TAU’s standing in France, holding high-profile events in Paris and bringing French President François Hollande to the campus during his 2013 Israel state visit. The appearance was significant for the French-speaking community in Israel and also showcased TAU know-how and innovation to notable French business delegations.

The French Friends stand out particularly for their support of needy students at TAU – a commitment that was initiated by the longtime French Friends President, the late Hugo Ramniceanu, and reinforced by Prof. Heilbronn.

Since 2008, Prof. Heilbronn has served as Vice Chairman of the TAU Board of Governors and he also sat on the 2009 Dan David Prize Committee. For his dedication and

outstanding contribution to the University, he was given the TAU President’s Award.

Prof. Heilbronn is the Managing Partner of the consulting firm M.M. Friedrich, Heilbronn & Fiszler. He graduated from Institut d’Etudes Politiques de Paris in 1983 and earned an MBA at Harvard Business School. He is an associate professor in business strategy at Sciences Po Paris. Seven years ago he facilitated the establishment of an exchange program between Sciences Po and TAU.

Prof. Heilbronn has been involved in Jewish and Zionist organizations since a young age. He is a member of the Board and of the Executive Committee of the Fondation du Mémorial de la Shoah-Centre de Documentation Juive Contemporaine à Paris, and a member of the Central Committee and Board of Directors of the Alliance Israelite Universelle.

“The French Friends are one of the most vital and active of our friends associations, and we are lucky to have François at their helm,” said TAU President Joseph Klafter. “He is a man of action and a man of letters, as well as a passionate and committed humanist.”



From left: TAU President Joseph Klafter, Canadian Prime Minister Stephen Harper and TAU Honorary Doctor David J. Azrieli.

## Canadian Prime Minister Stephen Harper Lauded at TAU

A staunch friend of Israel and the Jewish people, Canadian Prime Minister Stephen Harper was awarded a Tel Aviv University honorary doctorate in the presence of Israeli and Canadian dignitaries and TAU supporters at the conclusion of his 4-day state visit to Israel.

all Canadians stand taller.”

Judge Seal announced the establishment by the Canadian Friends of a chair named in Prime Minister Harper’s honor that would “make an invaluable contribution to science and scholarship by supporting innovative research on challenges facing both Israeli and Canadian society.”

Bestowing the award on Prime Minister Harper were TAU President Joseph Klafter, TAU Rector Aron Shai and TAU Governor and Honorary Doctor David J. Azrieli. Prof. Klafter said, “Tonight we pay tribute to one of the most remarkable friends of Israel, of scientific cooperation and of democracy.”

Mr. Harper noted that TAU was the first academic institution in the world to offer him an honorary doctorate after he became prime minister. “I want to accept it on behalf of not just Lauren and myself, but the entire Canadian Jewish community who has merited this award a million times,” he said.

Along with cabinet ministers, members of parliament, senators and top business executives, the Canadian attendees included a large delegation of the Canadian Friends of Tel Aviv University (CFTAU).

Speaking before the audience, CFTAU National President Judge Barbara Seal, CM, said to Prime Minister Harper: “Your constant, unwavering support of Israel has made



TAU Honorary Doctor Judge Barbara Seal, CM, with Mr. Harper

## Dr. Raymond R. Sackler Honored at the UN

In the rarefied atmosphere of the UN Security Council chamber, the Honorable Ron Prosor, Permanent Representative of Israel to the United Nations, recognized Dr. Raymond Sackler for his exceptional support of Tel Aviv University and the State of Israel. On behalf of Prime Minister Benjamin Netanyahu, Ambassador Prosor presented Dr. Sackler with a certificate commending his “unwavering commitment to higher education, research and the advancement of medicine, science and the arts in Israel.”

The event was organized by the American Friends of TAU and attended by TAU President Joseph Klafter; TAU Vice President for Resource Development Amos Elad; TAU Board of Governors Chairman Emeritus and Honorary Doctor Harvey M. Krueger; AFTAU National Chairman Jon Gurkoff;



From left: TAU President Joseph Klafter, Mrs. Beverly Sackler, Permanent Representative of Israel to the UN Ron Prosor, and honoree Dr. Raymond R. Sackler

TAU President’s Award recipient Howard R. Udell, who since passed away; and members of AFTAU, as well as members of the Sackler family and special guests.

At an intimate luncheon in the UN complex following the ceremony, Prof. Klafter praised the dedication of Dr. and Mrs. Sackler and their family to the ideals of higher education. “Raymond’s vision and generosity represent a tremendous life’s accomplishment, worthy of TAU’s most heartfelt appreciation, and of a nation’s gratitude and esteem,” he said.

Dr. Sackler was also presented with a book signed by Israeli President Shimon Peres, who similarly praised the Sackler family for their extraordinary contributions to the cause of higher education in Israel.



Dr. Richard Sackler (center) with daughter Marianne and the late Howard R. Udell





**“SAWA” –KAHANOFF ARAB STUDENT RETENTION INITIATIVE**

## Transforming the Arab Student Experience

In late summer 2013, incoming dentistry student Ayal Mousa faced a dilemma: Attend a month-long preparatory program at TAU for new students from the Arab sector, or continue working to save money for the upcoming school year. Rami Tibi, coordinator of Arab students at TAU’s Ruth and Allen Ziegler Student Services Division, telephoned Mousa personally to help him decide.

When Tibi enumerated the program offerings – including Hebrew for Arabic speakers, preparatory science studies, dormitory housing, and free transportation between Mousa’s Galilee village and Tel Aviv – Mousa realized that, yes, he would have less money for the school year, but he would gain an invaluable foothold in university life.

The preparatory program that Mousa attended is part of the “Sawa”–Kahanoff Arab Student Retention Initiative, founded by the Kahanoff Foundation and run by the Student Welfare Unit of the Ziegler Division. A dual-pronged support and research program now in its second year of operation, the Kahanoff Initiative addresses the needs of the Arab student community at TAU. The goals of the Initiative are to improve Arab student retention rates and to help graduates join the ranks of the professional workforce in Israel.

Currently 1,400 Arab undergraduates study at TAU. They face unique challenges: most are away from home for an extended period for the first time; they study in Hebrew, which is not their mother tongue; they face deep cultural differences; many are under financial pressure; and they are on average two to three years younger than their Jewish counterparts.

### Mutual dedication reaps results

The Kahanoff Initiative serves 300 first-year Arab students from selected study tracks with traditionally high Arab enrollment. The program provides scholarships, peer mentoring, study groups, subsidized private tutorials and psychological and social services. It is also in contact with Israel’s largest firms to arrange internships for Arab students and alumni.

The Initiative is now upping its study session offerings in response to surveys showing that students with 100% attendance at the sessions raised their grades by 12 points, on average, and tripled their chances of achieving a passing grade.

Beyond the numbers, the Initiative fosters relationship-building between Arab students and mentors and the primarily Jewish teaching, administrative and support staff.

“*Sawa* means ‘together’ in Arabic and close contact helps the staff stay abreast of students’ anxieties and emotional needs,” says Alberto Meschiany, Director of Psychological Services at the Ziegler Division.

### Paying it forward

Mousa today is enthusiastic about his university experience. Next year, he plans to become a Kahanoff mentor like second-year students Narmeen Massalha, Suzan Mansour and Nivn Jayusi. These three young women attribute their good grades and academic confidence to the security of knowing that there is a dedicated staff supporting them. Their motivation as mentors is to give back what they received and create a successful start for new Arab students.

Shira Herzog, outgoing President and CEO of the Kahanoff Foundation, says, “We seek to create a program in which every participant is an agent for change and that will help individual students to thrive at the University and become positive forces for transforming the Arab student experience on the whole. Kahanoff Initiative alumni volunteering to mentor new students offers a perfect example of our vision.”

*The Kahanoff Foundation was established in 1979 by Sydney Kahanoff, a Calgary businessman and philanthropist, and expanded by his wife, Fern Kahanoff. The foundation has initiated and supported innovative community development programs in Calgary and Israel, with an emphasis on access to education for Israel’s Arab minority.*



From left:  
Nivn Jayusi,  
Narmeen  
Massalha,  
Shira Herzog,  
Ayal Mousa  
and Suzan  
Mansour



From left:  
Moise and  
Chella Safra  
and TAU  
President  
Joseph  
Klafter

**THE CHELLA AND MOISE SAFRA BUILDING AND  
CHELLA AND MOISE SAFRA COURT**

# First Dormitory Building at Student City Inaugurated

The first modern dormitory building at Student City, the largest, most ambitious building project in TAU's history, was unveiled at a festive ceremony in the presence of TAU Friends, Chella and Moise Safra and family members, top university officials, staff and students. Also attending were Dr. Claudio L. Lottenberg, President of the Jewish Confederation of Brazil, and Jack Terpins, President of the Latin American Jewish Congress.

One of the first three buildings to be occupied in the project and situated at the entrance to the complex, the Chella and Moise Safra Building is providing much-needed, affordable living space to students from needy backgrounds and outlying communities.

Adjacent to the building is the Chella and Moise Safra Court, which will become the hub of the complex's commercial and recreational area.

**The unveiling ceremony**

After warm greetings by Chairman of the TAU Board of Governors Prof. Jacob A. Frenkel, TAU President Joseph Klafter described Moise and Chella Safra's role in realizing the grand dream of Student City.

"Ten years ago, an idea was born to build the biggest, most socially responsible student housing complex in the entire greater Tel Aviv area. It was hard to imagine the size, impressiveness and impact of the complex. But *one person* did have the imagination and vision, and that was Moise Safra, with the full support of Chella," he said.

"We are honored to link the future success of student residents in this building to the Moise and Chella Safra family name for generations to come," said Prof. Klafter. "We are proud that you have chosen to associate your name with Tel Aviv University as part of your tradition of dedication to Jewish heritage, social welfare, education, the arts and medicine," he told the couple.

Prof. Klafter recognized the role of Dr. Mario A. Adler, TAU Governor and President and Chairman of the Brazilian Friends of Tel Aviv University, for introducing the University to Moise and Chella Safra and for "nurturing what has turned into a warm, deep friendship."

A TAU honorary doctor, Moise Safra is linked with numerous institutions in Israel and overseas, as well as with Jewish communities, religious and health organizations, orphanages, schools, and retirement homes. Chella Safra has served as Brazilian representative to the

Jewish Agency's Board of Governors and as a member of the Executive Board and the Consulting Board of Keren Hayesod of São Paulo, and she is currently Treasurer of the World Jewish Congress.

"Together with the University, we are building upon TAU's tradition of inclusiveness, of providing a quality education to disadvantaged students, and of groundbreaking research," Chella said.



The Chella  
and Moise  
Safra  
Building



**VARDA AND BOAZ DOTAN RESEARCH CENTER IN HEMATO-ONCOLOGY**

## Tomorrow's Blood Cancer Treatments

In a milestone for advancing cancer research in Israel, the Varda and Boaz Dotan Research Center in Hemato-Oncology was inaugurated at Tel Aviv University. Established by co-founder of Amdocs and noted Israeli philanthropist, Boaz Dotan, together with his wife, Varda, the multi-million dollar Dotan Center aims to foster collaboration between leading Israeli and international experts in the field and cultivate the next generation of cancer researchers through grants and doctoral fellowships.

At the inauguration of the Center, TAU President Joseph Klafter thanked the Dotans for their visionary generosity, saying that cancer research is instrumental in fighting one of the world's leading causes of mortality. President Klafter also remarked that the donation "will act as an engine for cutting-edge doctoral research" in the field.

The Head of the Dotan Center, Prof. Nadir Arber, similarly stressed the importance of the Center's mandate, stating that the "research of today is the treatment of tomorrow." As part of this mission, the Dotan Center will host yearly seminars and international conferences for the world's leading hemato-oncologists.

Speaking at the ceremony, Mr. Dotan – himself a TAU graduate in mathematics – noted that this was the first time his family had donated to basic academic research, and that they did so after being deeply impressed by the University and the innovative science being carried out within its walls.



From left: Boaz and Varda Dotan with TAU President Joseph Klafter and TAU Rector Aron Shai

**ALROV REAL ESTATE RESEARCH INSTITUTE**

## Professionalizing the Real Estate Industry

A critical lack of affordable housing in Israel was one of the main factors behind the widespread social protests that swept the country during 2011-2012. The protests have since quieted down, but new construction has yet to catch up with public demand due to regulatory, bureaucratic and other problems confronting the Israeli real estate industry.

Recognizing that a healthy real estate market is essential for a thriving economy, Israeli businessman Alfred Akirov, a longtime TAU supporter and former member of the TAU Executive Council, has established the Alrov Real Estate Research Institute at the Faculty of Management—Leon Recanati Graduate School of Business Administration.

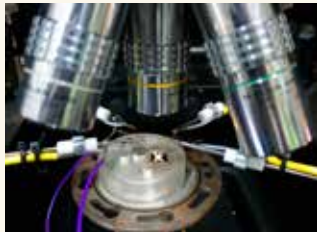
The new institute, headed by Prof. Eli Amir, engages in advanced research and market analysis, teaches students and practitioners state-of-the-art entrepreneurial skills, and collaborates with similar real estate institutes around the world. The institute also nurtures young talent in the field by awarding scholarships to master's, doctoral and post-doctoral students.

"The Alrov Real Estate Research Institute will disseminate theoretical and practical knowledge and help strengthen transparency and professionalism in the industry," said Dean of Management Prof. Asher Tishler.

Alfred Akirov is a prominent figure in the Israeli and international business arenas. He serves as Chairman of the Alrov Group, which he founded in 1978. A TAU Governor and 2007 Honorary Doctor, Akirov has drawn leading figures from the country's business community into university activities, first as President of the Israeli Friends of TAU (2002-8) and then as a member of the TAU Executive Council. He founded the Akirov Fellowship Program for Excellence in Economics and Business Administration, which provides scholarships to outstanding graduate students at TAU's Eitan Berglas School of Economics and the Faculty of Management. He also established the Alfred Akirov—ALROV Institute for Business and Environment, among other projects.



President Joseph Klafter and Mr. Alfred Akirov (right) at the signing ceremony



## Hong Kong: Gaining Ground

TAU's Development and Public Affairs Division has raised the University's profile in Hong Kong with a successful inaugural event showcasing TAU nano expert Prof. Yael Hanein.

## Sydney: LinkedIn

Clifford Rosenberg (pictured), Managing Director for LinkedIn South East Asia, Australia and New Zealand, spoke to over 100 young adults at an event organized by the Australian Friends of Tel Aviv University (NSW Division).



## Sydney: Medal to Howard

Former Australian Prime Minister John Howard was awarded TAU's George S. Wise Medal for his longstanding advocacy of Israel and deep friendship with the Australian Jewish community. The event, organized by David Dinte, President of the New South Wales Chapter of the Australian Friends, and hosted by Joseph and Gerda Brender and Sam and Agi Moss, benefited a newly launched scholarship fund for NSW university students who wish to study at TAU.



From left: TAU Governors Sam Moss and Joseph Brender, TAU VP Amos Elad, Former PM John W. Howard OM AC, and NSW Australian Friends President David Dinte

## Melbourne and Sydney: Magical Nano

Audiences in Melbourne and Sydney were riveted by Prof. Yael Hanein, Director of TAU's Center for Nanoscience and Nanotechnology, who gave compelling talks on advancements in nanoscience and TAU's collaborations with China in this field at events hosted by the Victorian and NSW chapters of the Australian Friends of TAU.



From left: Meir Buber, Prof. Yael Hanein, Rita Perelberg, Victorian Friends President Dr. Victor Wayne, and Dr. Harry Perelberg

## Toronto: Secret to Success

The Canadian Friends of TAU (CFTAU) Alumni & Leadership Committee held its first networking event, which brought the leaders of Jewish Toronto's young professional community together for an exciting opportunity to build business relationships and mingle with like-minded people.



From left: CFTAU Ontario and Western Region Executive Director Stephen Adler, Rose Reisman, Michael Kimel, Jennifer Witterick, Jian Magen and CFTAU Ontario and Western Region Chairman Jeff Wagman



## Montreal: Bravo for Multipiano

Close to 150 TAU supporters were mesmerized by TAU Buchmann-Mehta School of Music professor Tomer Lev and his Multipiano ensemble's three young rising stars at a concert organized by the Canadian Friends of TAU in Montreal. The festivities began with an elegant Shabbat dinner generously hosted by Tina and Max Smart at their home.



Guests at Shabbat dinner hosted by Tina and Max Smart



From left, back: CFTAU Montreal and Eastern Region President, Irwin G. Beutel; Alvin Segal; CFTAU National President, Judge Barbara Seal, CM; Prof. Tomer Lev; and Berenika Glixman. From left, front: Nimrod Meiry-Haftel and Daniel Borovitsky.



From left: TAU Board of Governors Chairman Prof. Jacob A. Frenkel, TAU President Prof. Joseph Klafter, honoree Harvey Krueger and TAU Executive Council Chairman Dr. Giora Yaron



Harvey and Connie Krueger

From left: AFTAU National Chairman Jon Gurkoff, TAU President Joseph Klafter, TAU Board of Governors Chairman Prof. Jacob A. Frenkel and TAU Executive Council Chairman Giora Yaron

### New York: Honoring a Legend

American Friends of Tel Aviv University celebrated passionate pioneer and former Chairman of TAU's Board of Governors Harvey M. Krueger at an elegant dinner at the Pierre Hotel. In a rare off-campus ceremony, Krueger received the distinguished award of Honorary Doctor.



### Boston: Music for the Soul

Over 80 TAU alumni and friends gathered at the beautiful home of Varda and Israel Shaked for a program presented by MusicTalks founder and director, TAU double alumnus Elad Kabilio, featuring a chamber music concert by TAU alumni.



From left: David Dorfman, Rosalie Lurie, Sonya and Howard Waldow, Gail Reiss, Gideon Raff and Pat Saperstein

### Beverly Hills: *Homeland* Behind the Scenes

Nearly 100 TAU and OSP alumni and friends gathered at Sonya and Howard Waldow's elegant home for a warm and intimate evening with TAU graduate Gideon Raff, the award winning creator, writer, and director of hit TV show *Homeland*, and Pat Saperstein, deputy editor of *Variety*.



From left: Dean of Management Prof. Asher Tishler, Maurice Levy and TAU President Joseph Klafter

### Tel Aviv: Communicating in the Digital Age

TAU Honorary Doctor and media mogul Maurice Levy was keynote speaker at a panel discussion organized by the French Friends of TAU in collaboration with the Recanati Business School. A close friend and supporter of TAU, Levy gave his insights into new approaches in marketing and communication in the digital age.



From left: Israeli Friends Chairman Amnon Dick, TAU President Joseph Klafter and Karim Rashid

### Tel Aviv: Design of the Future

Karim Rashid, superstar industrial designer with over 3,000 designs in production and winner of more than 300 awards, was hosted by the Business Academic Club of the Israeli Friends at an exclusive lecture on the future of design.



### Berlin: German Friends Greet Ambassador Avi Primor

A select group of German bankers, politicians, journalists and university professors attended a lively talk by Ambassador Avi Primor (pictured), head of the new European Studies program at Tel Aviv University, at a reception held by the German Friends.



From left: TAU VP Amos Elad, TAU Governor Fred Chaoul, Mario Blejer, TAU President Joseph Klafter, Argentinean Friends President Polly Mizrahi de Deutsch and Miguel Kiguel

## **Buenos Aires: Discussing Economics**

For the 18th consecutive year, the Argentinean Friends of TAU held their influential International Economics Symposium. Featuring talks by renowned economic analysts, the symposium was once again a resounding success with over 1,000 people attending, including diplomats, business and community leaders.

During his Mexico stay, Prof. Klafter visited Tecnológico Monterrey to discuss student exchange programs.



## **Guadalajara: Book Fair**

The Mexican Friends promoted TAU at the Guadalajara International Book Fair, which this year featured the State of Israel. Israel Prize laureate and TAU Professor Anita Shapira was keynote speaker at this cultural festival, which was attended by Israeli President Shimon Peres, TAU President Joseph Klafter and TAU VP Amos Elad.

From left: Mervyn and Andy Druian, Lady and Lord Sacks, Harold and Nira Preiskel



## **London: Recognizing Longstanding Contributions**

The TAU Trust in the UK together with the London chapter of the dental fraternity, Alpha Omega (AO), honored longstanding TAU Governor and AO founding member Dr. Harold Preiskel. Among the guests were Lord Jonathan Sacks in one of his last appearances as Chief Rabbi of the United Kingdom, and Prof. Ilana Eli, head of TAU's Maurice and Gabriela Goldschleger School of Dental Medicine. The event was organized by TAU Governor Mervyn Druian, International Director of AO.

## **Paris: Achieving Goals**

Amos Elad, TAU VP for Resource Development, was warmly hosted by the French Friends of TAU on his first official visit. He held productive meetings with key members of the French Friends to discuss the association's objectives. Mr. Elad was also the guest of honor at an event hosted by French Friends President Prof. François Heilbronn and Ariane Heilbronn.



From left: Prof. François Heilbronn, Armand Stemmer, Amos Elad and Ronit Stemmer



From left: Herman Richter, TAU VP Amos Elad, and TAU Governors Adolfo Smolarz and Fred Chaoul



From left: Dr. Luis Alberto Lacalle de Herrera, Dr. Carlos Alberto Montaner, Marcos Aguinis and Prof. Manuel Trajtenberg



From left: Amos Elad, Dr. Luis Alberto Lacalle de Hererra and Argentinean Friends President Polly Mizrahi de Deutsch



The Board of the Ecuadorian Friends of TAU

## **Quito: New Friends Association in Ecuador**

The newest TAU Friends association, headed by Daniel Kersfeld, was inaugurated in Ecuador in September at a formal signing ceremony. Amongst those attending the inauguration ceremony were Mr. Touvia Goldstein and Ruth Alvarez de Goldstein, members of the Board of the Spanish Speaking Friends of TAU in Israel who were instrumental in the creation of the new Friends association, and Ambassador Eliyahu Yerushalmi, Israeli Ambassador to Ecuador.

## XIN: New Path to the East

In what could be the largest Israeli-Chinese research collaboration of all time, Tel Aviv University signed an MOU with Tsinghua University in Beijing – known as the “MIT of China” – to establish a joint center called XIN (“new” in Chinese).

The center will initially focus on fields that enjoy accelerated develop-

ment in both Israel and China, such as nanotechnology, but in time will expand to other fields of science.

In describing the XIN vision, Dr. Ramon Albalak, who heads international collaborations at TAU's Center for Nanoscience and Nanotechnology and will co-manage the initiative on the Israeli side, said that “XIN is

poised to become a global innovation leader. Our edge will come from the combination of several elements – the recruitment of top-flight research fellows in China and Israel; the continuous exchange of faculty, students and ideas; a unique system for mentoring graduate students; and a conscious emphasis on technology transfer and cooperation with industry.”

The center's nucleus will be in Beijing, with a smaller extension operating in Tel Aviv, Albalak clarified.

A delegation of 10 representatives from Tsinghua, headed by Qinxian Jim, Deputy Secretary General and Director of the Office of the President of Tsinghua University, and Prof. Quanshui Zheng, Director of CNMM – Center for Nano and Micro Mechanics at Tsinghua, arrived at TAU this winter to discuss practical aspects of establishing the XIN center. Prof. Zheng will serve as XIN director and Prof. Yael Hanein, who heads the TAU nano center, will serve as co-director.



Dr. Ramon Albalak (left) with the Tsinghua delegation

During its celebration of International Human Rights Day, Tel Aviv University's Kantor Center for the Study of European Jewry unveiled its latest contribution to fighting racism around the world – two of four volumes collating laws against discrimination and racial vilification. The first of its kind, *Legislating for Equality: A Multinational Collection of Non-Discrimination Norms* is the work of five Kantor Center researchers and two students from TAU's Buchmann Faculty of Law. The volumes were presented in the presence of two Israel Supreme Court Justices – Prof. Daphne Barak-Erez, former Dean of the Buchmann Faculty of Law, and Elyakim Rubinstein – as well as advocate Arie Zuckerman, Secretary General of the European Jewish Fund and Chairman of the Kantor Center Executive Board.

Prof. Dina Porat, head of the Kantor Center, incumbent of the Alfred P.

## World's Anti-Racism Laws Published by Kantor Center

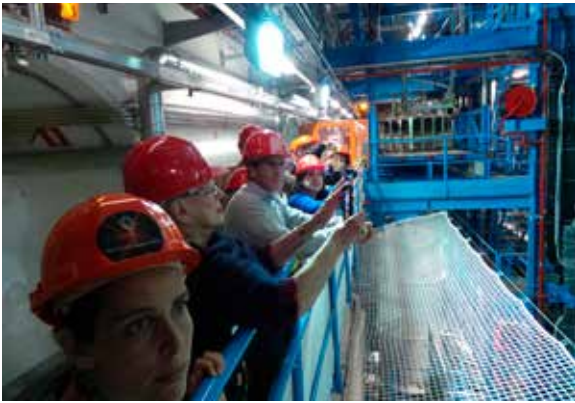
Slaner Chair for the Study of Contemporary Anti-Semitism and Racism and Chief Historian at Yad Vashem, noted that *Legislating for Equality* will “serve as a useful tool for human rights activists, diplomats and researchers by providing an up-to-date picture of the legal status of anti-discrimination law in every country.” Porat, who co-edited the volumes along with project coordinator Talia Naamat and Nina Osin, both lawyers, stressed that while the collection reveals positive and serious



Prof. Dina Porat

constitutional developments in some countries, it also exposes worrying trends in others in the fight against discrimination.

By examining reports, databases, interviews and other material from various sources including governmental authorities, embassies and research centers, the scholars produced a comprehensive snapshot of relevant laws in both Europe and the Americas. The final two volumes on Africa and Asia will be published by 2015.



## CERN X 2

TAU's second tour of CERN, the European Organization for Nuclear Research in Geneva, was a resounding success. The exclusive three-day trip provided access for a select group of TAU friends and supporters to the site of the world's largest particle accelerator. Participating from TAU were President Joseph Klafter; Vice President for Resource Development Amos Elad; and members of the TAU CERN team, Professors Yaron Oz, Erez Etzion and Halina Abramovicz. The program included vibrant scientific discussions and a range of cultural outings. Shortly after the TAU group went home, Israel was accepted as the first new member state of CERN since 1999.

TAU group touring CERN



## Joint Columbia-TAU Expedition for Regional Eco-Peace

TAU master's student Eliav Shtull-Trauring believes that the environmental problems facing the Middle East region – such as water shortage, pollution and sewage disposal – are shared ones. “There’s very little cooperation between Israel and the Palestinian Authority on dealing with environmental issues,” says Eliav, “but everything that happens in the Palestinian Authority affects us Israelis as well. For example, we’re sitting on the same water resources and we have to work together to ensure water quality over the long run.”

Eliav participated in a unique two-week study tour, entitled “Regional Sustainability in the Middle East,” jointly held by Columbia University’s Earth Institute and TAU’s Porter School for Environmental Studies. Students from the two institutions toured environmental “hotspots” including East Jerusalem, Amman, the Dead Sea and the Jordan River, with a particular focus on the “seam zone” – the area bordered by Israel, Jordan and the Palestinian Authority.

During the course of the tour, the students heard diverse perspectives on cross-border environmental issues from academics, NGO representatives, government officials and activists from Israel, Jordan and the



Participants viewing the Abu Dis landfill located between Jerusalem and Ma’ale Adumin

Palestinian Authority.

The tour is expected to be the forerunner for further collaboration between the two universities. Veronika Lacktman, a graduate student of ecotourism and cross-border environmental issues at TAU, summed it up as follows: “The trip was an inspiration. What I learned in a few days was more than I could have hoped to achieve in many hours of work and theoretical studies.”

Madeline Silva from Columbia added that “environmental issues span many academic areas – among them conflict resolution, sustainability management, public health, and

international and public affairs – and it was great that the program had people of diverse academic backgrounds working together to reinforce this interdisciplinary breadth.”

Dr. Arie Neshet, Professional Director at the Porter School, said “the cooperation between TAU and Columbia University’s Earth Institute enabled this unique cross-border experience and introduced students to the environmental consequences of the political situation in the region.”

The group also attended a two-day international colloquium held on the Tel Aviv University campus.

## TAU-UC Berkeley Collaboration

As part of a memorandum of understanding with the University of California, Berkeley, TAU launched the Raymond and Beverly Sackler Fund for Convergence Research in the Biomedical, Physical and Engineering Sciences. The new framework will provide seed funding for innovative projects aimed at meeting the healthcare challenges of the future and support TAU's ongoing commitment to extending its reach globally.

## TAU Joins Forces with Catalonia's Universities

A cooperation agreement was signed between TAU and the universities of Catalonia, Spain, for joint workshops, research collaborations and exchange of faculty, doctoral and post-doctoral students. The signing took place on campus between TAU Vice President Raanan Rein and Catalanian President Artur Mas i Gavarró. Joint funding requests for research in aging, cancer and Mediterra-



 Catalanian President Artur Mas i Gavarró (left) and TAU Vice President Raanan Rein

nean studies will be submitted to the EU's Horizon 2020 program. "The agreement is one more step in TAU's strategic goal of becoming a global university," said Prof. Rein at the ceremony.



## Startup University

Pioneering Israeli startups founded by TAU alumni are constantly making the headlines. According to a 2013 study from the online resource

database CrunchBase, TAU ranks 15<sup>th</sup> in the world for producing founders of venture capital-funded startups headquartered in the United States – the only non-American university on the list. Also, TAU placed 4<sup>th</sup> for the average amount raised by graduates in the all-important first round of funding, and 16<sup>th</sup> out of the world's top 100 universities that produce millionaires, according to the data research company WealthInsight and business magazine *Spears*. Two such newly-minted millionaires are TAU computer science and philosophy major Ehud Shabtai and economics major Uri Levine, whose traffic and navigation app, Waze, was recently acquired by Google for \$1.1 billion.

## TAU Joins Coursera

More than 70,000 students worldwide are participating in three courses given by TAU professors through the online learning website, Coursera. Courses are free and provide TAU students with academic credit. "The Fall and Rise of Jerusalem," taught by Prof. Oded Lipschits, Director of the Sonia and Marco Nadler Institute for Archaeology, and "What a Plant Knows," taught by Prof. Daniel Chamovitz of the Department of Molecular Biology and Ecology of Plants, have over 60,000 participants from 129 countries. "The Emergence of the Modern Middle East," taught by Prof. Asher Susser of the Moshe Dayan Center for Middle Eastern and African Studies, has 11,000 participants, including enrollees from Muslim countries such as Iran, Pakistan and Afghanistan who have chosen to learn about their region from an Israeli professor. See more at <https://www.coursera.org/telaviv>.

## prizes

Prof. Francois Englert, a Raymond and Beverly Sackler Senior Professor by Special Appointment and Fellow of TAU's Mortimer and Raymond Sackler Institute of Advanced Studies, was awarded the 2013 Nobel Prize in Physics for his work on subatomic particles. Prof. Englert, a professor emeritus at the Université Libre de Bruxelles, Belgium, shared the

## TAU Sackler Professor Wins Nobel Prize in Physics

award with Peter W. Higgs, professor emeritus at Edinburgh, UK, for the theory of how particles acquire mass, and for the prediction of the existence of the Higgs boson particle.



 Nobel Prize laureate Prof. François Englert

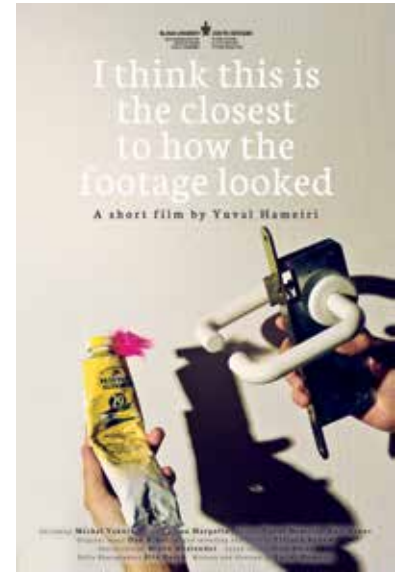


## Peace-Promoting Project Wins Amnesty International Prize

The Amnesty International Award of the annual Henri Langlois Film Festival in France was awarded to *Water*, a collaborative project of TAU and Palestinian filmmakers. The project featured nine films revolving around the theme of water that were produced, filmed and edited by joint teams of young Israelis and Palestinians. Yael Perlov, film editor, producer and lecturer at TAU's

Department of Film and Television, Yolanda and David Katz Faculty of the Arts, was the initiator and Artistic Director of the project, which was commended by the judges for "enabling young filmmakers to study and learn about one another and thereby break the cycle of hatred and prejudice in the Middle East, and for creating a message of togetherness and dialogue – a message that conveys the peace-making power of art."

The film was supported by the Rabinovich Foundation for the Arts, the Embassy of the United States in Israel and the Geshar Multicultural Film Fund.



## YOUNG DIRECTOR WINS SUNDANCE AWARD

Yuval Hameiri of TAU's Film and Television Department overcame 66 entries from around the world to win the Short Film Jury Award: Non-Fiction at the Sundance Film Festival, one of the world's largest cinematic competitions for independent filmmakers. Entitled *I Think This Is the Closest to How the Footage Looked*, the film explores the final day of Hameiri's mother's life, and is produced in an experimental documentary style. Hameiri's film previously won the Student Film Competition at the 2013 EPOS International Art Film Festival and an International Film Student Meeting Award at the San Sebastian Festival.

people

## French President Hollande Visits TAU



French President François Hollande visited TAU and spoke to a large gathering of members of the French-speaking community in Israel. He met with TAU President Prof. Joseph Klafter and with President of the French Friends of TAU, Prof. François Heilbronn. The two presented Hollande with a unique gift: a signed original edition of a book written by former Prime Minister of France Léon Blum (1872-1950). The event was held at the initiative of the French Friends of TAU. President Hollande was accompanied by a delegation of MEDEF – the largest union of employers in France, who were in Israel to explore projects showcasing Israeli innovation in science and technology. A second delegation of businessmen representing 60 high-tech companies from France also were introduced to TAU's technology transfer activities and visited the labs of top researchers.

From left: Prof. François Heilbronn, Prof. Joseph Klafter and French President François Hollande

## Dutch Foreign Minister Visits TAU



Dutch Foreign Minister Frans Timmermans recently lectured at TAU by invitation of the Israel Council on Foreign Relations (ICFR) in cooperation with the Program for European Studies at TAU, headed by Ambassador Avi Primor. The event was hosted by Laurence Weinbaum, Executive Director of the ICFR.

Dutch Foreign Minister Frans Timmermans



## ISRAEL PRIZE



**Prof. Irad Malkin** of TAU's Department of History at the Lester and Sally Entin Faculty of Humanities, co-director of TAU's Center for Mediterranean Civilizations project and incumbent of the Maxwell Cummings Family Chair for the Study of Mediterranean Culture and History, has won the 2013 Israel Prize in General Historical Research.

An expert in Ancient Greek history, colonization, ethnicity and Mediterranean Studies, Prof. Malkin was recognized for his breakthrough in identifying Sparta as a maritime, colonizing power and his study of Greek religion, ethnicity, migration and settlement. He was also cited for his integration of new methodologies, such as the Network theory, into his research.

The only Israeli member of the European Network for the Study of Ancient Greek History, Prof. Malkin collaborates with international academic institutions and government bodies, particularly the EU. Prof. Malkin has authored five books, edited seven others, and has published numerous articles. He is the co-founder and co-editor of *The Mediterranean Historical Review*, cited by Thomson Reuters as one of the most influential historical publications with 30,000 articles downloaded each year.

**Honors:** Meitner Humboldt Research Award, **Prof. Bezalel Bar-Kochva**, Humanities • Member of the Israel Academy of Sciences and Humanities, **Prof. (emer.) Ruth Berman**, Humanities • ACUM Board of Directors Prize, **Shimon Cohen**, Arts • 2013 Society for the Protection of Nature in Israel Prize, **Prof. Tamar Dayan**, Life Sciences • 2013 Mifal Hapayis Landau Prize for Science and Research, **Prof. Illana Gozes**, Medicine • 2013 Prof. Yossi Katan Award, **Dr. Daphna Hacker**, Law • Israeli Academy of Film and Television Lifetime Achievement Award, **Prof. (emer.) Ram Loevy**, Arts • Member of the Israel Academy of Sciences, **Prof. (emer.) David Schmeidler**, Exact Sciences • 2013 Caroline von Humboldt Prize, **Dr. Noa Shenkar**, Life Sciences • ENBIS Box Medal, **Prof. David Steinberg**, Exact Sciences • 2012-2013 Emile Zola Human Rights Prize, **TAU Housing, Community & Law Clinic**, Law • 2013 Administration for the Development of Weapons and Technological Infrastructure Prize, **Prof. Joseph Terkel**, Life Sciences • BBVA Foundation Frontiers of Knowledge Award in Economics, **Prof. (emer.) Elhanan Helpman**, Economics



**Prof. Dan Rabinowitz**, a member of the Gershon Gordon Faculty of Social Sciences, has been appointed Head of TAU's Porter School of Environmental Studies, replacing Prof. Pinhas Alpert. Prof. Rabinowitz previously served as chairman of various national and international environmental organizations and currently serves as Chairman of the Israeli Association for Environmental Justice. He holds a PhD in social anthropology from Cambridge University, and is a widely published expert on the environment and global warming. Prof. Rabinowitz received the Pratt Foundation Prize for his contribution to the media coverage of environmental issues in Israel, as well as the TAU Rector's Award for excellence in teaching.



**Prof. Zvika Serper**, Japanese theater and cinema expert, theater director and actor, was appointed Dean of the Yolanda and David Katz Faculty of the Arts, replacing Prof. Hannah Naveh. Prof. Serper has been a faculty member at TAU's Department of Theater Arts since 1985, and between 2006 and 2010 headed the Department of East Asian Studies at the Lester and Sally Entin Faculty of the Humanities. He studied in Japan for many years, and has spent the past two decades exploring the incorporation of various traditional Japanese aesthetics and techniques into acclaimed productions of classical Western works. Prof. Serper has conducted master classes and workshops in acting and movement techniques at major theaters, acting schools, and universities in the US and Europe.



**Ms. Yael Regev** was appointed Director of Development and Public Affairs. Ms. Regev recently served as the Director of Public Affairs at the Azrieli College of Engineering in Jerusalem, where she focused on enhancing links with industry, government and alumni. Prior to that she worked for eight years as a senior producer for Israel's Channel 10. Ms. Regev holds a BA in Communications and Management from the College of Management – Academic Studies, and an MA in Law from Bar-Ilan University.

**Appointments:** **Prof. Shimon Abboud**, Engineering, Director of the Ela Kodesz Institute for Medical Engineering and Physical Sciences • **Prof. Shmuel Carmeli**, Exact Sciences, Director of the Teva Institute for Organic and Biomedical Chemistry • **Prof. Galili Shahar**, Humanities, Director of the Minerva Institute for German History • **Prof. Amir Sharon**, Life Sciences, Director of the Institute for Crop Improvement • **Dr. Rosalie Sitman**, Humanities, Director of the Sverdlin Institute for Latin American History and Culture • **Prof. Reuven Stein**, Life Sciences, Director of the Yitzhak Rabin Institute for Neurobiology • **Prof. Natan Bornstein**, Medicine, incumbent of the Norma and Alan Aufzien Chair for Research in Parkinson's Disease and Neurodegenerative Diseases • **Prof. Leo Corry**, Humanities, incumbent of the Bertram J. and Barbara Cohn Chair in the History and Philosophy of Science •

**Prof. Hanoach Dagan**, Law, incumbent of the Stewart and Judy Colton Chair in Legal Theory and Innovation • **Prof. Eli Friedlander**, Humanities, incumbent of the Laura Schwarz-Kipp Chair of Modern Philosophy • **Prof. Michael Kozlov**, Medicine, incumbent of the Joseph Klafter Chair in Biophysics • **Prof. Leonard Leibovici**, Medicine, incumbent of the Dr. Sol Amsterdam/Dr. David P. Schumann Chair in Medical Education • **Prof. Gregory Livshits**, Medicine, incumbent of the Lilian and Marcel Pollak Chair in Biological Anthropology • **Prof. Tova Milo**, Exact Sciences, incumbent of the Chair for Information Management • **Prof. Eran Rabani**, Exact Sciences, incumbent of the Marko and Lucie Chaoul Chair of Theoretical and Computational Nanoscience • **Prof. Ran Spiegler**, Social Sciences, incumbent of the Aaron Rubinstein Chair in Economics

### Muslim Minorities in Non-Muslim Majority Countries: The Islamic Movement in Israel as a Test Case

Edited by Prof. Elie Rekhess and Arik Rudnitzky, Moshe Dayan Center for Middle Eastern and African Studies (2013)

How does the status of Muslim minority communities in the West differ from that of Israel's Muslim community? Has the Islamic Movement in Israel developed a unique religious-political platform resulting from the "double marginalization" of Israel's Arab minority? Based on lectures given during a March 2010 conference at TAU, this volume addresses these questions and elaborates on the history, politics and religion of the Muslim minority in Israel. Among the contributors are prominent researchers from the academia and the public sector, including co-editor Prof. Elie Rekhess, Senior Research Fellow at TAU's Moshe Dayan Center for Middle Eastern and African Studies and former Head of TAU's Konrad Adenauer Program for Jewish-Arab Cooperation. Co-editor Arik Rudnitzky is Project Manager of the Adenauer Program.



### The Missing File

By Dror A. Mishani, Harper Collins (2013)



Literary scholar Dror A. Mishani has captivated readers around the globe with this crime mystery novel. Winner of the prestigious Martin Beck Award, the emotionally wrought page-turner tells the story of Israeli detective Avraham Avrahami's quest to locate a missing teenage boy. It's a thriller that will leave readers questioning the tenuous nature of truth. Mishani teaches at TAU's Department of Hebrew Literature, Lester and Sally Entin Faculty of Humanities.

### The Forgotten Kingdom: The Archaeology and History of Northern Israel

By Prof. Israel Finkelstein, Society of Biblical Literature (2013)

Although Israel was dominant for most of the time the Kingdoms of Israel and Judah coexisted, it has remained in Judah's shadow in both the Hebrew Bible and consequently in modern scholarship.

This book presents the first comprehensive study of the history and archaeology of northern Israel from the Late Bronze Age (ca. 1350 BCE) until the fall of the Northern Kingdom in 720 BCE and beyond.

The narrative is based on archaeological evidence and makes use of the most updated field research, together with existing knowledge from ancient Near Eastern and biblical texts. TAU's Prof. Israel Finkelstein, Jacob M. Alkove Professor of the Archeology of Israel, is a Dan David Prize laureate.





TEL AVIV UNIVERSITY

## Want the inside story on the Middle East?

Join Prof. Asher Susser of Tel Aviv University, an expert in Arab history and politics, in a free online course on the "Emergence of the Modern Middle East"

Register Now!  
[coursera.org/telaviv](https://coursera.org/telaviv)

Zarmon DDB®



# Tel Aviv University Lay Leadership Worldwide

## ARGENTINA

Polly Mizrahi de Deutsch

President

Argentinean Friends of Tel Aviv University

## AUSTRALIA

Dr. Victor Wayne

President

Australian Friends of Tel Aviv University

Victoria Chapter (Melbourne)

David Dinte

President

Australian Friends of Tel Aviv University

New South Wales Chapter (Sydney)

## AUSTRIA

Dr. Hannes Androsch

President

Austrian Friends of Tel Aviv University

## BRAZIL

Dr. Mario Arthur Adler

President and Chairman

Brazilian Friends of Tel Aviv University

Dr. Esther Kuperman

Head of Chapter, Rio de Janeiro

Brazilian Friends of Tel Aviv University

Dr. Mario Gurvitz Cardoni

Head of Chapter, Porto Alegre

Brazilian Friends of Tel Aviv University

## CANADA

Judge Barbara Seal, CM

National President

Canadian Friends of Tel Aviv University (CFTAU)

Irwin G. Beutel

President

Canadian Friends of Tel Aviv University

Montreal, Ottawa and Eastern Region

Jeff Wagman

Chairman

Canadian Friends of Tel Aviv University

Toronto, Ontario and Western Region

## ECUADOR

Daniel Kerssfeld

President

Ecuadorian Friends of Tel Aviv University

## FRANCE

Prof. François Heilbronn

President

French Friends of Tel Aviv University (AFAUTA)

## GERMANY

Dr. h.c. Ernst Gerhardt

President

German Friends of Tel Aviv University

## INDIA

Aaron Solomon

President

Indian Friends of Tel Aviv University

## ISRAEL

Amnon Dick

Chairman

Israeli Friends of Tel Aviv University

## MEXICO

Jaime Murow Troice

President

Mexican Friends of Tel Aviv University

## NETHERLANDS

Robert van der Heijden

President

Dutch Friends of Tel Aviv University

## NORWAY

Herman Kahan

Chairman

Norwegian Friends of Tel Aviv University

## SOUTH AFRICA

Jonathan Osrin

Chairman

South African Friends of Tel Aviv University

## SPAIN

Isaac Querub

President

Spanish Friends of Tel Aviv University

## SWEDEN

David Feder

President

Swedish Friends of Tel Aviv University

## SWITZERLAND

Anette Bollag-Rothschild

President

Swiss Friends of Tel Aviv University

## UK

William Shaul

Treasurer

Tel Aviv University Trust in the UK

Leslie Wolfson

Chairman

Tel Aviv University Trust in the UK

Scottish Group

## URUGUAY

Bernardo Faincaig

President

Uruguayan Friends of Tel Aviv University

## USA

Jon Gurkoff

National Chairman

American Friends of Tel Aviv University (AFTAU)