

Tel Aviv University Annual Report 2016



### **CONTENTS**

Messages | p. 30

**TAU Officers** | p. 32

Distinctions | p. 33

Projects | p. 34

**60 More Things** | p. 36



Celebrating 60 years of **Tel Aviv University**, 60 years of pursuit and discovery, with countless more questions and breakthroughs yet to come...







We know that the immune system holds promise for fighting cancer.

We're not sure exactly how to harness it ...yet

- Prof. Adit Ben-Baruch (Life Sciences), a member of the Center for Nanoscience and Nanotechnology, investigates the impact of inflammatory and immune processes on breast cancer progression and their therapeutic promise. Her goal is to understand how to promote acquired immunity while limiting potentially harmful inflammation.
- While we now understand the roles of most cells in the cancer microenvironment, certain cells still remain in near-complete obscurity. One of these is eosinophils a white blood cell in the immune system that has been associated with cancer for 120 years. Now, **Prof. Ariel Munitz** (Medicine) has begun to unravel the anti-tumor function of eosinophils in colorectal cancer in hopes of developing a new drug. Funding for the project comes from the Varda and Boaz Dotan Research Center in Hemato-Oncology.

3

### Since when has faulty editing been fatal?

**Prof. Eli Eisenberg** (Exact Sciences) is revolutionizing the understanding of oncogenesis – how tumors form and develop – through computational analysis of DNA and RNA expression data. While DNA carries the genetic information in cells, RNA is a copy of the genetic code that is translated into protein. Eisenberg, a member of the Edmond J. Safra Center for Bioinformatics, has shown that the RNA "transcript" can be faultily "edited" before being translated into protein in a way that causes tumor growth.



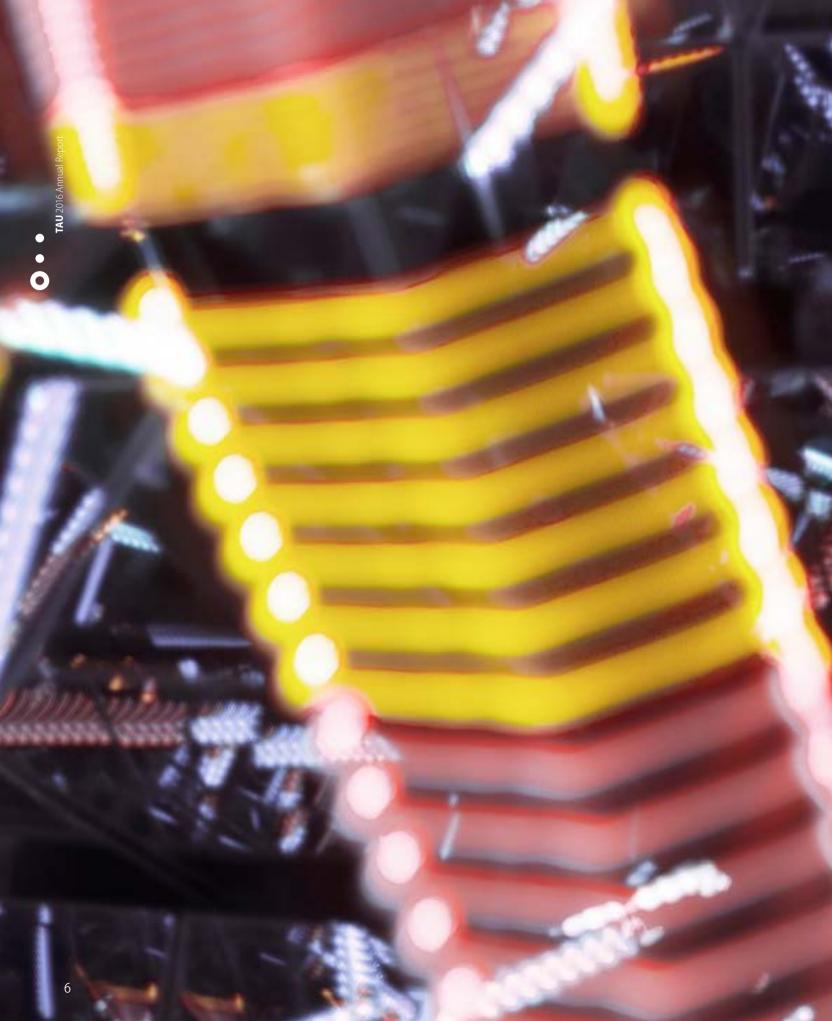


### What is the nervous system-cancer link?

Recruited from the Weizmann Institute of Science, clinical neuropharmacologist and registered nurse **Dr. Angela Ruban** (Medicine) studies the neurotransmitter glutamate in the central nervous system and its role in the development of cancer and neurodegenerative diseases. She is a member of the Stanley Steyer School of Health Professions and the Sagol School of Neuroscience.

### Can DNA help treat leukemia?

**Dr. Yuval Ebenstein** (Exact Sciences), head of the NanoBioPhotonix Lab and member of the Center for Nanoscience and Nanotechnology, has discovered that the levels of a DNA chemical modification – known as 5HMC – in the blood of leukemia patients and other blood cancers are lower than those found among healthy people. Now, his goal is to design personalized medicine for blood cancer patients according to their 5HMC level.







### What if Big Data could help...

### Create millions of jobs?

Despite being named "the sexiest job" of the 21st century, the world faces a severe shortage of data scientists – analysts with the skills to make decisions based on big data. In response, the Coller School of Management launched the Big Data and Business Analytics MBA track, headed by **Dr. Tomer Geva**. The track will offer students a broad understanding of data science combined with real-life management skills.

#### Find more stars in the universe?

Technological advances are enabling astronomers to use big data to intensify their research on the structure of the universe, stellar evolution and other topics. Recognizing this, **Dr. Dovi Poznanski** (Exact Sciences) organized a four-day international workshop on "Big Data in Astronomy," attended by over 50 scientists from Johns Hopkins University, Harvard-Smithsonian Center for Astrophysics, JPL/Caltech, Max Planck Institute for Astronomy and other institutions.

### Reduce dropout rates at universities?

In a bid to improve student retention, **Alberto Meschiany**, head of the Unit for Psychological Services, Ruth and Allen Ziegler Student Services Division, is using Big Data and data mining methods to understand why students drop out. His team is developing novel models to predict the dropout risk of students according to their personal histories and past achievements. The next step will be to tailor intervention strategies.

### Prevent crime?

**Dr. Sarit Weisburd** (Economics) crunched police and emergency call data from Dallas, Texas, to examine the tradeoff that occurs when a police department must divide its time between responding to emergency incidents that have already occurred, and patrolling a neighborhood to deter future crimes. Weisburd's research could contribute to better police policy and help reduce crime in Israel and beyond.



# BIG SOCIETY



## What has British coal got to do with Middle Eastern history?

Researchers at the Department of Middle Eastern and African History are linking between human experience on the one hand, and the material world, landscape and other environmental factors on the other. They ask questions such as: How is Saudi history connected to water-transporting camels? What is the link between the Arab Spring and desertification? How has the Syrian civil war affected the Israeli climate? Similarly, **Dr. On Barak** (Humanities) is investigating "coalonialism" – the impact of Britain's coal exports on spheres such as communication, transportation, agriculture and cultural life in Saudi Arabia before oil was found there in 1920.



Dr. On Barak with a lump of coal



### Does global citizenship have a minimum entry fee?

**Dr. Miri Yemini** (Education) investigated global citizenship education among teachers at two schools – a regular Israeli school and an international one. Her study demonstrated that in both cases global citizenship was not deemed suitable for everyone and that its relevance to a particular student was determined by social factors such as geographic mobility. Her team is now examining whether or not these limits are also placed on students from lower socioeconomic backgrounds.

## What's the recipe for successful public policy?

9

Working in the field of sustainable development, **Dr. Ram Fishman** (Social Sciences) and his team are demonstrating how public policy can only be fully successful if it takes into account the interconnecting relationship between social, economic, political, cultural and climatic aspects of a region. Examples of current projects include using big data and field experiments to save India's water resources, and evaluating financial tools for making solar-powered irrigation available to poor women farmers in Nepal. Recruited from George Washington University, Dr. Fishman is a member of the new Boris Mints Institute for Strategic Policy Solutions to Global Challenges.





We can express all sorts of things mathematically...

Can we develop a mathematical model to feed the hungry?

Distributing food donations to welfare agencies is not a simple matter. A major problem is the logistics of collecting and delivering perishable products. Taking up the challenge, PhD candidate **Ohad Eisenhandler** and **Prof. Michal Tzur**, both of Engineering and the Manna Center Program for Food Safety and Security, have developed a mathematical model that balances between effective vehicle routing on the one hand, and equitable distribution of products on the other, while endeavoring to meet allocation needs.

We've cracked the genome for wheat. But we don't know which genes will help prevent the world food crisis...yet.

In record time, **Dr. Assaf Distelfeld** (Life Sciences), together with a joint team from TAU and NRGene Inc., has mapped the genome of wild emmer wheat, the direct ancestor of today's cultivated wheat. The genome map makes possible the identification of key genes that can be bred into commercial wheat to produce higher yields, better disease resistance, and more adaptability to extreme climate conditions.

# COMMUNICATION

What if "violence" were a language?

Late Medieval art in Germany and France developed a unique visual vocabulary of mutilated, tortured and eroticized bodies, whether in sculpture, stained glass windows or altarpieces. With support from Gerda Henkel Stiftung, **Prof. Assaf Pinkus** (Arts) and Prof. Martin Büchsel of Frankfurt University are studying the history of emotional expression and "blood culture" in these works and what they say about the viewer's sensibilities and corporeal experience.



### What if humans could speak to bacteria?

The ways in which disease-causing bacteria communicate with each other might contribute to their virulence. **Dr. Avigdor Eldar** (Life Sciences) and his team are exploring the forces that lead to the enrichment and diversification of bacterial languages in order to manipulate them for human benefit.

## Can electronic books enhance language better than regular books?

Educators have always viewed books as a development tool, but in the digital age this notion has taken on a new dimension. In cooperation with colleagues from Holland and Israel, **Prof. Dorit Aram** (Education) has developed customized electronic books to assess their effect on the language and social understanding of pre-school children from low socioeconomic backgrounds. The project received support from Mrs. Tova Sagol of Israel.

### Can Facebook cause social revolution?

Digital technologies and media are widespread among lower-class communities in India; they enable marginal voices to express themselves and wield influence in new and unprecedented ways while evading mainstream censors and checks. **Dr. Ronie Parciack** (Humanities) is studying what effects this will have on India's prevailing social order.

### Who owns the news?

With the explosion of social media networks as primary sources of information, the balance of power between journalists and news consumers has shifted; news producers now consider which content to produce based on the preferences of their friends and followers. **Dr. Shira Dvir Gvirsman** (Social Sciences), at the Aubrey Dan Department of Communication, is investigating the ramifications of this trend on news media and their consumers.



## RESPECT



## 19

### Dignity for all?

The concept of dignity has recently been the center of legal controversies in the US and Israel. Through a joint grant with Prof. Irene Tucker of UC Irvine, **Prof. Milette Shamir** (Humanities) initiated an international workshop on "The Politics of Dignity." It aims to stimulate a comparative US-Israel discussion of the issue beyond its legal manifestations, and to shed light on the changing relationship of law and culture to human respect.

#### Smiles for all?

Everyone deserves the best dental care available. That's the principle behind the outreach activities of the Maurice and Gabriela Goldschleger School of Dental Medicine, which this year celebrates its 40th anniversary. The School's dentists provide advanced treatment to some 18,000 patients with mental and developmental disabilities at 20 regional clinics throughout Israel, as well as periodic check-ups and oral hygiene training at community centers and special needs schools.

A smart braille display from the Mia and Mile Pinkas Accessible Learning Center



60 Things We Don't Know...



### Is autism a result of a neurochemical imbalance?

With funding from ERA-NET Neuron, **Prof. Illana Gozes** (Medicine) is leading an international collaboration with colleagues from Belgium, Italy and Canada for modeling syndromic autism caused by mutations in the ADNP protein. ADNP is a key regulatory gene for healthy brain functioning and neuroprotection discovered by Prof. Gozes 15 years ago.

## What if movie-watching could improve anger management?

**Prof. Talma Hendler** (Medicine and Psychology) and **Dr. Gal Raz** (Arts) have launched a unique clinical research project combining film studies, neuroscience and computer science. Based on the emerging field of "brain-computer interfaces," the project is being run at the TAU-affiliated Sourasky Medical Center with three test groups: IDF soldiers, fibromyalgia patients, and women who suffer from PMS. Its aim is to enable participants to better control their emotions by watching an animated film specially designed to trigger an emotional response. Dr. Raz is a member of the Steve Tisch School of Film and Television, and both he and Prof. Hendler are members of the Sagol School of Neuroscience.

## What can brain anatomy tell us about gender?

Using MRI to analyze over 1,400 human brains, the Sagol School of Neuroscience's **Prof. Daphna Joel** (Psychology) and colleagues have found that there is no "male" or "female" brain; rather, most brains comprise a unique mosaic of features attributed to both men and women. The widely reported finding offers an entirely new approach to studying variation in brain structure and function.



## We know that variations in our genome are linked to disease, but how and why do they increase susceptibility?

Recruited from Stanford, **Dr. Ran Elkon** (Medicine), a member of the Edmond J. Safra Bioinformatics Center, studies previously unexplored layers of gene regulation and examines how natural variations in the human genome might create a predisposition to certain common diseases.

### Can how we think about science shape its course?

**Dr. Ehud Lamm** (Humanities) of the Cohn Institute for the History and Philosophy of Science and Ideas, in collaboration with colleagues at Bar Ilan University, offers a new look at 20th century genetics centered on conceptualizing the organization of the genome rather than on the discovery of the gene. This approach aims to dispel myths, revise thinking about scientific progress, and influence biomedical policy.

### We know that pathogens develop drug resistance.

What we don't know is which of their genes are involved in the process...yet.

By enabling a more focused look at a range of genetic behaviors, the new Next-Generation Sequencing Laboratory established by **Profs. Itai Benhar** and **Judy Berman** (Life Sciences) will boost the productivity of many research groups. For example, Prof. Berman uses gene sequencing both to determine how infection-causing yeast rapidly evolves resistance to drugs, and to identify which of its 7,000 genes are involved in the disease process.



## 29

### What does DNA folding have to do with DNA functioning?

PhD student **Alon Diament** and **Prof. Tamir Tuller** (both of Engineering) recently showed that the 3D organization of genes – that is, the way they are folded inside a cell nucleus – is related to their function in the cell. They are now developing novel algorithms for studying the evolution of gene organization that could advance understanding of gene function and expression, genome engineering, and cancer research and therapy. Diament is both an Edmond J. Safra Bioinformatics Fellow and Azrieli Fellow.







# 31

#### Make robots curious?

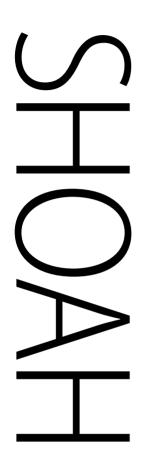
Combining mathematics, neuroscience and robotics, **Dr. Goren Gordon** (Engineering), recruited from MIT, is pioneering the field of "artificial curiosity" at his newly established Curiosity Lab. He plans to develop a mathematical theory of the human mind's need for exploration, with the aim of creating autonomous robots that intelligently explore their environment and learn.

32

### Make computers learn more adeptly?

- "Deep learning" is a technique used in training computers
  to learn independently. By feeding a computer enough
  examples of, for instance, image recognition, it can then go
  on to accomplish the task independently with new images.
  Recently arrived from Duke University, new faculty member
  Dr. Raja Giryes (Engineering) is working on developing a
  theory of how this process works and how to fine-tune it.
- When it comes to machine learning, the greater the data input, the better the software will learn. Yet as Big Data gets bigger, techniques for handling this mass of data become weaker. Addressing the problem, mathematician **Dr. Haim Avron** (Exact Sciences) recruited from IBM's TJ Watson Research Center is working on a technique called "sketching." bines the data in complex, but computationally cost-effective ways to create a smaller data set that nevertheless captures the essence of the full data set; in other words, he makes Big Data smaller. This technique has proven successful in machine learning applications such as speech recognition.

## What happens when you try to represent the Holocaust...



### In architecture?

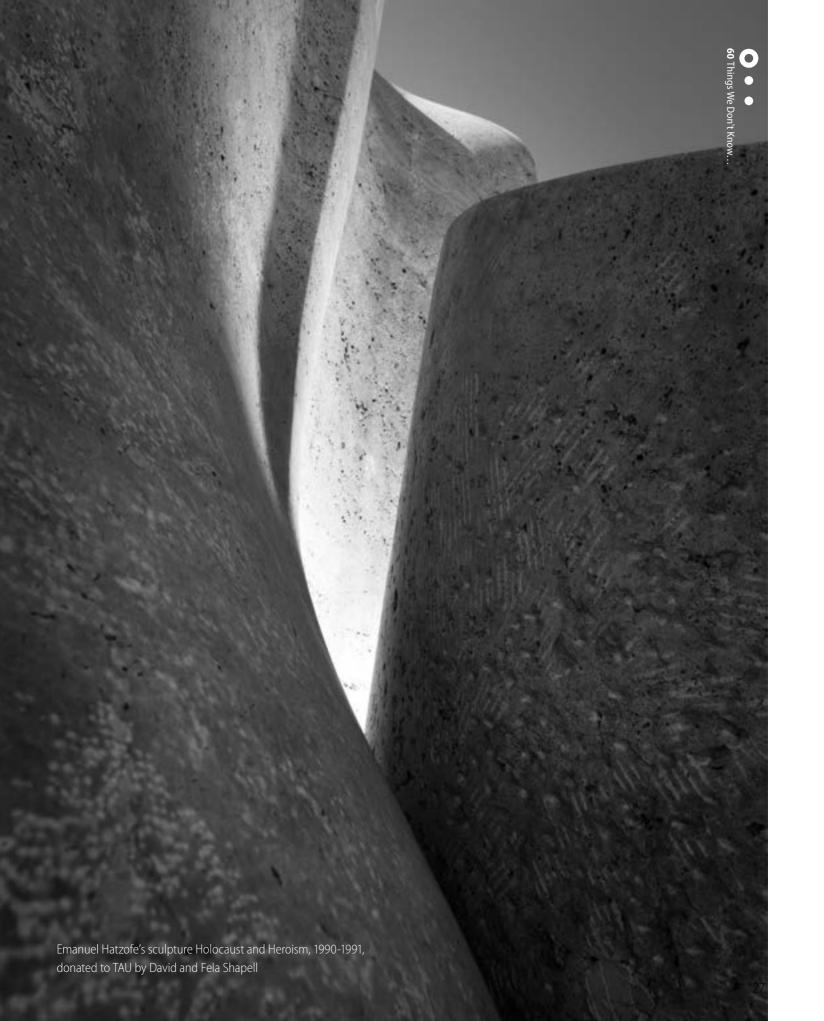
In a recently published book, **Dr. Eran Neuman** (Arts), head of the David Azrieli School of Architecture, shows the evolution of Holocaust commemoration through a comparative analysis of several key museums and memorials. The book describes how the cultural and political contexts of commemoration lead to different interpretations of the past, while also addressing the problem of how to represent an extreme historic event in a contemporary setting.

### In art?

The Shoah experience still echoes in photography and video art, three generations later. In a conference organized by **Drs. Ayelet Zohar** and **Orly Shevi** (Arts), lectures and presentations examined the portrayal of World War II by young artists. The conference received support from The Adv. Raphael and Fanny Lotz Colloquium for Commemoration and Representation of the Holocaust in the Arts and included artists and scholars from the USA, UK, Germany and Japan.

#### In theater?

In a unique undertaking involving Israeli and Austrian theater students, the "Camp Herzl Project" – held in both countries – focused on the Salzburg building that had once served as a Deported Persons Camp for Holocaust survivors. Third generation victims and victimizers created a theatrical representation of emotionally charged events, confronting their history through archival and field research, acting and directing, and personal encounters with witnesses. Initiated by Israeli director **Dedi Baron** and **Prof. Gad Kaynar** (Arts), the project generated wide acclaim.



## 34

## What happens when mechanics meets biology?

Joining TAU after post-doctoral research at Caltech and the Weizmann Institute of Science, **Dr. Ayelet Lesman** (Engineering) develops new tools to quantify the mechanical interaction of biological cells with the surrounding 3D environment. Her work will lead to new insights into processes such as cell motion, cell division and stem cell differentiation that can be used for tissue engineering and regenerative medicine.







Chairman's Message

This year Tel Aviv University celebrates its 60th anniversary. What a remarkable journey it has been: We have grown, in just six decades, into Israel's largest and most influential research and teaching institution, as well as a globally-networked force for innovation. What began in 1956 as two small institutes has expanded into a diversified campus spanning the breadth of sciences, humanities and arts. The student body grew by 230 times to 30,000 today. The University leads Israel in research excellence and entrepreneurship, and its 160,000 alumni are among the top leaders in science and technology, health, business, government, education and culture.

During this 60-year period, Israel itself went through a dramatic transformation. The population quadrupled in size. The country evolved from being socialist, agrarian and somewhat underdeveloped to become a thriving, free-market, technologically-powered economy. Israel's universities – TAU chief among them – directly contributed to this growth. Outstanding R&D and collaboration with industry have driven the State of Israel to 9th place in the world for knowledge creation.

Now, we must keep up the momentum.

Tel Aviv University must surge ahead in its national mission of advancing Israeli society and its global mission of improving our world.

This is where our local and international leadership comes in. In an ever more challenging and competitive environment, Tel Aviv University is counting on the vision and guidance of our Governors and Friends. The University is deeply grateful for the inspiring support we have received for 60 years. We hope to see many more meaningful partnerships in the years ahead.

Jacob Freshel

Prof. Jacob A. Frenkel

Chairman, Board of Governors Tel Aviv University Sixty years ago, Israeli leaders inaugurated the future home of Tel Aviv University on a barren plot in Ramat Aviv. At that time, they could not have imagined that the scrubby dunes before them would blossom into a large, thriving campus with world-class research, hundreds of teaching programs, and robust ties with leading organizations around the globe.

TAU's extraordinary growth trajectory could not have been achieved without the hard work and commitment of its faculty, staff, students, lay leaders and benefactors. The University's success has been a collective one; we draw our strength and support from a wonderful community of people in Israel and throughout the Jewish world.

In this milestone year, wonderful things are transpiring. Among them, we are opening the state-of-the-art BLAVATNIK CENTER for Drug Discovery, dedicating the Steve Tisch School of Film and Television, and launching important new initiatives in public policy, cancer research, human evolution, communication studies and periphery scholarships. We completed an international architectural competition for a major building to house the Center for Nanoscience and Nanotechnology, and are planning more buildings in the Life Sciences, Architecture and Engineering.

Just as this report went to press, the University received an immensely generous gift to dedicate the Coller School of Management. This addition will be the lead gift for TAU's new \$1 billion Capital Campaign, aimed at keeping the University at the forefront of global academia.

Looking back at the University's history, we have much to be proud of. We have much to be grateful for. And we have much to look forward to.

Prof. Joseph Klafter

President Tel Aviv University



President's Message







## 

### Lay Leaders



**Prof. Jacob A. Frenkel**Chairman of the Board of
Governors



**Dr. Giora Yaron**Chairman of the Executive
Council



**Dr. h.c. Karl-Heinz Kipp**Deputy Chairman of the Board of Governors



Mr. Robert Goldberg



Mr. Harvey M. Krueger



Dr. Raymond R. Sackler



Mr. Michael H. Steinhardt

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

Vice Chairpersons of the Board of Governors

Chairmen Emeriti of the Board of Governors

### Campus Leaders

Prof. Joseph Klafter President

Prof. Yaron Oz Rector

**Mr. Mordehai Kohn**Director-General

**Prof. Raanan Rein** Vice President

**Prof. Yoav Henis**Vice President for Research and Development

Mr. Amos Elad

Vice President for Resource Development

**Prof. Eyal Zisser** Vice Rector

**Prof. Aron Shai** Pro-Rector

**Prof. Moshe Zviran**Dean of the Coller School of Management

Prof. Leo Corry
Dean of the Lester and Sally

Dean of the Lester and Sally Entin Faculty of Humanities Prof. Ron Harris

Dean of the Buchmann Faculty of Law

Prof. Yossi Rosenwaks

Dean of the Iby and Aladar Fleischman Faculty of Engineering

**Prof. Daniel Chamovitz**Dean of the George S. Wise Faculty of

Dean of the George S. Wise Faculty of Life Sciences

**Prof. Tammie Ronen**Dean of the Gershon H. Gordon
Faculty of Social Sciences

Prof. Ehud Grossman

Dean of the Sackler Faculty of Medicine

Prof. Zvika Serper

Dean of the Yolanda and David Katz Faculty of the Arts

Prof. Michael Krivelevich

Dean of the Raymond and Beverly Sackler Faculty of Exact Sciences

**Prof. Tova Most**Dean of Students

### DISTINCTIONS



**Prof. Noga Alon,** Exact Sciences, Honorary Doctorate from the University of Waterloo, Canada

**Prof. David Andelman,** Exact Sciences, Alexander von Humboldt Re-Invitation Award; Chinese Academy of Science President's International Fellowship Initiative; Technical University of Munich Ambassador

**Prof. Ady Arie,** Engineering, Kadar Family Award for Outstanding Research

**Prof. Shiri Artstein-Avidan,** Exact Sciences, Erdos Prize; Kadar Family Award for Outstanding Research

**Prof. Nitsa Ben-Ari,** Humanities, 2015 German-Hebrew Translation Prize

**Prof. Eyal Benvenisti,** Law, Kadar Family Award for Outstanding Research

**Dr. Daniel Deutch,** Exact Sciences, Wolf Foundation Krill Prize for Excellence in Scientific Research

**Prof. Haim Diamant,** Exact Sciences, Fellow of the American Physical Society

**Prof. Michael Gluzman,** Humanities, 2015 Bahat Prize for Outstanding Academic Manuscript

**Prof. Yosef Gorny,** Humanities, Tel Aviv Municipality Award for Public Service

**Dr. Or Hen,** Exact Sciences, Israel Physical Society Prize for Best Experimental Thesis in 2015

**Prof. Ron Lifshitz,** Exact Sciences, Fellow of the American Physical Society

**Dr. Vered Maimon,** Arts, College Art Association Millard Meiss Publication Award

**Multipiano Ensemble,** Arts, Israel Minister of Culture Prize for Best Israeli Chamber Ensemble

**Prof. Raanan Rein,** Humanities, Humboldt Research Award; Reimar Lüst Award for International Scholarly and Cultural Exchange

**Prof. Gal Oestreicher-Singer,** Management, 2015 Sandra A. Slaughter Early Career Award; Kadar Family Award for Outstanding Research

**Prof. Mooly Sagiv,** Exact Sciences, Fellow of the Association for Computing Machinery

**Prof. Dov Te'eni,** Management, 2015 LEO Award for Lifetime Exceptional Achievement in Information Systems

**Dr. Yossi Yovel,** Life Sciences, Wolf Foundation Krill Prize for Excellence in Scientific Research

**Prof. Tomer Volansky,** Exact Sciences, Israel Physical Society Young Faculty Prize for 2015

Prof. Yossi Loya, Life Sciences, EMET Prize

### **NEW PROJECTS**

#### **Academic Development**



- Support for Minerva Humanities Center and Cohn Institute for the History and Philosophy of Science and Ideas Bertram and Barbara Cohn, USA
- Coller School of Management Jeremy Coller Foundation, LJK
- Support for Institute for National Security Studies Crown Family Foundation, USA
- Aubrey Dan Department of Communication Canada
- Practical Studies Track at Aubrey Dan Department of Communication – Dan David Foundation, Israel
- General Support Benjamin Davis, USA
- Online Studies Program Clement Erbmann, USA
- Support for Evens Program in Conflict Resolution and Mediation – France
- Support for Maurice and Gabriela Goldschleger Eye Research Institute – Laurette H. Gensler Revocable Trust, USA
- General Support Harvey Gerry Estate, USA
- Support for Institute for National Security Studies Diane
   P. and Guilford Glazer Donor Advised Fund of the Jewish
   Community Foundation of Los Angeles, USA
- Yiddish Faculty Project Naomi Prawer Kadar Foundation, USA
- Naomi Prawer Kadar International Yiddish Summer Program
   Naomi Prawer Kadar Foundation, USA
- Landa Restricted Fund in Dental Medicine Israel
- Support for Ofakim (Horizons) Program: The Study of Judaism as Culture and Teacher Training in Schools – Latin America

- Support for Walter Lebach Institute for Jewish-Arab Coexistence through Education – Latin America
- Support for Institute for National Security Studies Alfred H. Moses, USA
- Support for Institute for National Security Studies Joseph and Jeannette Neubauer, USA
- Support for Institute for National Security Studies Chemers Neustein, USA
- Support for Institute for Law and Philanthropy Peamey Tikva Ltd. Charitable Foundation, Israel
- Support for Institute for National Security Studies Stewart Resnick, USA
- Support for Institute for National Security Studies Ms.
   Marcia Riklis and Mr. Michael Kessler, USA
- General Support Joseph Shalant and Wendy Kronick , USA
- General Support Samuel Langberg Silfam Trust, USA
- Support for Institute for National Security Studies Jeffrey Silverman, USA
- Support for Moshe Dayan Center for Middle Eastern and African Studies – Richard D. Sincere and Debra Sincere, USA
- Support for Leon Recanati Graduate School of Business Administration – Richard D. Sincere and Debra Sincere, USA
- Sofaer International Case Competition (SICC) Program Michael Sofaer, USA

#### Research

- Research support for the S. Daniel Abraham Institute for Molecular Virology – Mr. and Mrs. S. Daniel Abraham
- Research Fund for Prof. Yossi Shiloh Sheldon Adelson, USA
- Research Fund for Prof. llan Tsarfaty Breast Cancer Research Foundation, USA
- Dan David Center for Human Evolution and Biohistory Research – Italy/Liechtenstein
- Leona M. and Harry B. Helmsley Nanotechnology Research Fund – USA



- Cosmology Research Fund for Prof. Yoel Refaeli The Joan and Irwin Jacobs Fund, USA
- Research Fund for Prof. Martin Kupiec Latin America
- Research Fund for Prof. Dan Peer Leonard Mark, USA
- Research Fund for Dr. Adi Stern M.E.H. Foundation Est. by Margot and Ernst Hamburger (CC), Israel
- Boris Mints Institute for Strategic Policy Solutions to Global Challenges Russian Federation
- Support for Manna Center Program for Food Safety and Security – OSI Group, USA

#### **Campus Development**

- Center for Nanoscience and Nanotechnology Building Anonymous, UK
- Support for the Steinhardt Museum of Natural History, Israel National Center for Biodiversity Studies – Ted Arison Family Foundation, USA
- Stanley and Joyce Black Family Foundation Student Club USA
- Building for the Graduate Student Center and Teaching Labs, Life Sciences – Latin America
- Family Floor dedicated to Cancer Research at the Sackler School of Medicine – Latin America
- Support for the Steinhardt Museum of Natural History, Israel National Center for Biodiversity Studies – Latin America
- Computer Science Floor Millie Phillips, Australia
- Renovation of the Edmond J. Safra Center for Ethics Edmond J. Safra Foundation, Lichtenstein
- Support for the Steinhardt Museum of Natural History, Israel National Center for Biodiversity Studies – Michael H. Steinhardt, USA
- Equipment for Physics Research Wolfson Family Charitable Trust, UK

#### **Student Aid and Fellowships**

- Asper International LL.M. Scholarship Fund Canada
- Crown Graduate Fellowship Program in the Sciences USA
- Scholarship Fund for Needy Students Eugenie Fromer Estate, USA
- Doctoral Fellowship Fund Israeli Friends of Tel Aviv University
- Kadar Scholarship for Women in Business and Entrepreneurship – Dr. Avraham Kadar, USA
- Global Research and Training Fellowships in the Medical and Life Sciences – Naomi Prawer Kadar Foundation, USA
- Scholarship Fund for Students at Tel Aviv University Latin America
- Eva Lester Graduate Scholarships Bermuda
- Nissim and Rina Levy Periphery Scholarship Fund UK
- Don and Sara Marejn Scholarship Fund Australia
- Jaime Peisach Friendship Scholarship Fund USA
- Louise Polkowitz Scholarship Endowment Fund USA
- Rami Ungar Scholarship Fund Israel
- Walanpatrias Doctoral Scholarships Liechtenstein
- Yakov and Blanche Lev Scholarships Ehud Weinstein, Israel
- Support for the Ruth and Allen Ziegler Student Services
   Division Ruth Ziegler, USA

#### **Community**

 Support for the Steinhardt Museum of Natural History, Israel National Center for Biodiversity Studies – JNF

Listed: Projects of \$100,000 and above, by alphabetical order within categories.



# **Tel Aviv:** 60 things about the University and the City

- » TAU is Israel's largest university
- » Tel Aviv has the 2nd largest economy of any city in the Middle East after Abu Dhabi
- » TAU is 1st in Israel in Reuters' Top 100 Most Innovative Universities
- » Tel Aviv is Israel's 2nd most populous city after Jerusalem
- » The inventor of Iron Dome is a TAU alumnus



- » TAU is a top 10 school globally for producing VC-backed founders of startups (Pitchbook)
- » Tel Aviv made the World's Most Creative Cities list (Canada's Globe and Mail)
- » TAU runs Israel's largest biomedical complex with 1,400 affiliated physicians at 17 hospitals
- » Tel Aviv is the 5th most innovative city in the world (Compass)
- » Tel Aviv was the young State of Israel's temporary seat of government until it moved to Jerusalem in December 1949
- » TAU has 30,000 students and 160,000 graduates
- » Tel Aviv is a UNESCO World Heritage site for its Bauhaus buildings
- » TAU runs Israel's first and only research zoo
- » Tel Aviv made Lonely Planet's list for Ultimate Party Cities
- » 5 out of 11 Israeli Supreme Court Justices are TAU alumni

- » TAU sent the first Israeli scientific experiment into space
- » Tel Aviv has fewer Jewish residents than New York City
- » TAU has 340 research centers and professorships and 400 labs
- » Tel Aviv is number 10 in the list of cities with the best-looking residents (Travelers Digest)
- » TAU founded Israel's first and only graduate school for environmental studies
- » Tel Aviv ranks among the world's 10 Best Beach Cities (National Geographic)
- » TAU conducts 3,500 research projects annually
- » Tel Aviv has 300 days of sunshine per year
- » Tel Aviv is 3rd in the world for sushi restaurants per capita after Tokyo and New York City
- » TAU teaches international students from 60 countries
- » Tel Aviv is known as "The Nonstop City"
- » TAU hosted the first Egyptian scientists to attend a scientific conference in Israel

- » Tel Aviv attracts over one million visitors annually
- » TAU runs 16 English-language degree programs
- » Tel Aviv has 50 miles of bike paths
- » TAU is 16th among the world's top 100 universities for producing millionaires (Spear's)
- » Tel Aviv offers free citywide wi-fi access, even on the beach
- » TAU is the only Israeli university to make the Times' Top 200 in Reputation ranking
- » TAU administers the Dan David Prize– Israel's only million dollar award
- » Tel Aviv hosts 18 out of Israel's 35 performing arts centers
- » TAU ranks among the top 15 film schools outside the USA (Hollywood Reporter)
- » One out of every 3 Tel Aviv residents is aged 18-35
- » TAU's International Student Film Festival is one of the biggest in the world
- » Tel Aviv ranks 14th in the world among Best Cities for Young People (YouthfulCities Index)

- » TAU researchers have generated 2,400 inventions and 100 spinoff companies
- » TAU faculty have included 6 ambassadors, 9 government ministers and Members of Knesset, and 4 chief scientists
- » "Tel Aviv" means "hill of spring" in Hebrew
- » TAU ranks among the top 20 universities that Google recruits from
- » TAU has the team that first identified four genes linked to hearing loss
- » Tel Aviv's "Florentin" neighborhood is among the 26 top hipster neighborhoods in the world (Business Insider)
- » Over 550 licensed patents for commercialization have come out of TAU
- » Tel Aviv was founded by Jewish immigrants in 1909 as the first "Hebrew City"
- » TAU pioneered the transformation of nursing into an academic field in Israel
- » Tel Aviv ranks among the world's Best Culinary Destinations (Saveur magazine)







- » TAU has 21 drugs and medical treatments in the commercialization pipeline
- » Tel Aviv was voted the World's Smartest City (2014 Smart City Expo in Barcelona)
- » TAU is the 1st choice of students and employers from among Israel's 70 colleges and universities
- » TAU ranks 1st in Israel (and 20th in the world) in citation impact
- » Tel Aviv is the 3rd best city in the world for architecture (Conde Nast)
- » TAU operates the only center for the study of migrating birds in the Middle East
- » Tel Aviv is the world's Best Gay City (American Airlines)
- » TAU established the first affirmative action program at an Israeli university
- » Tel Aviv is the 5th most visited city in the Middle East and Africa (MasterCard)
- » Tel Aviv was united with Jaffa into a single municipality in 1949
- » Tel Aviv is the 25th most important financial center in the world

#### Can you immunize against rudeness?

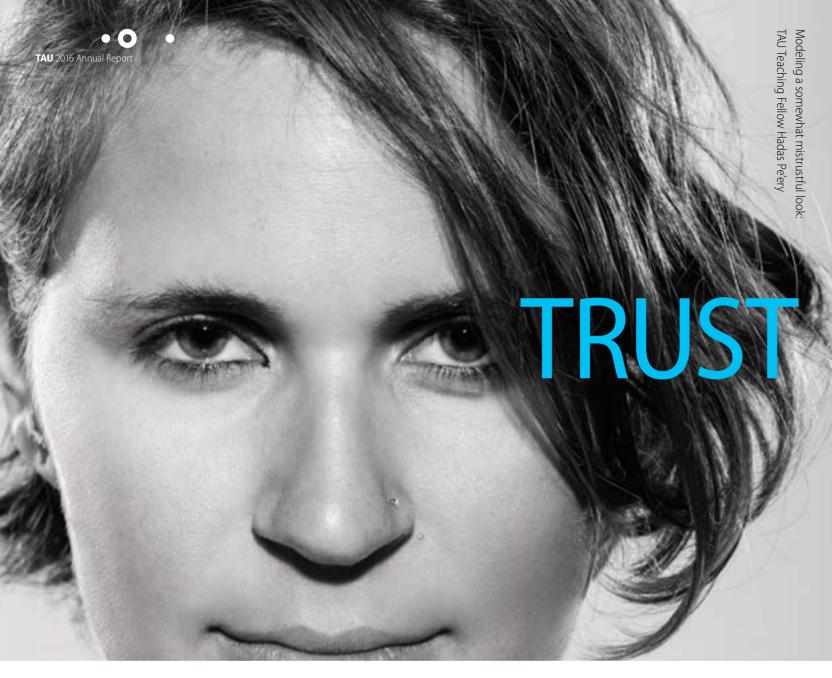
**Prof. Peter Bamberger** and PhD student **Arik Riskin** (both of Management), together with US partners, demonstrated that incivility can have devastating effects on the performance of medical teams, resulting in potentially fatal delays in diagnosis and errors in treatment. The team is now working to develop interventions aimed at preventing or mitigating such adverse consequences.

### How do older people stay happy in a hostile world?

Based on the assumption that humans largely manage to overcome adversity, **Prof. Dov Shmotkin**, **Dr. Kfir Ifrah** and PhD student **Noam Markovitz** (all of Psychology), are studying when and how aging people show resilience in hostile conditions. The Rosita and Esteban Herczeg Institute on Aging project aims to provide new insights into adaptation to old age, while highlighting the roles of positive psychological techniques.

## Will alternate frameworks bring peace and justice?

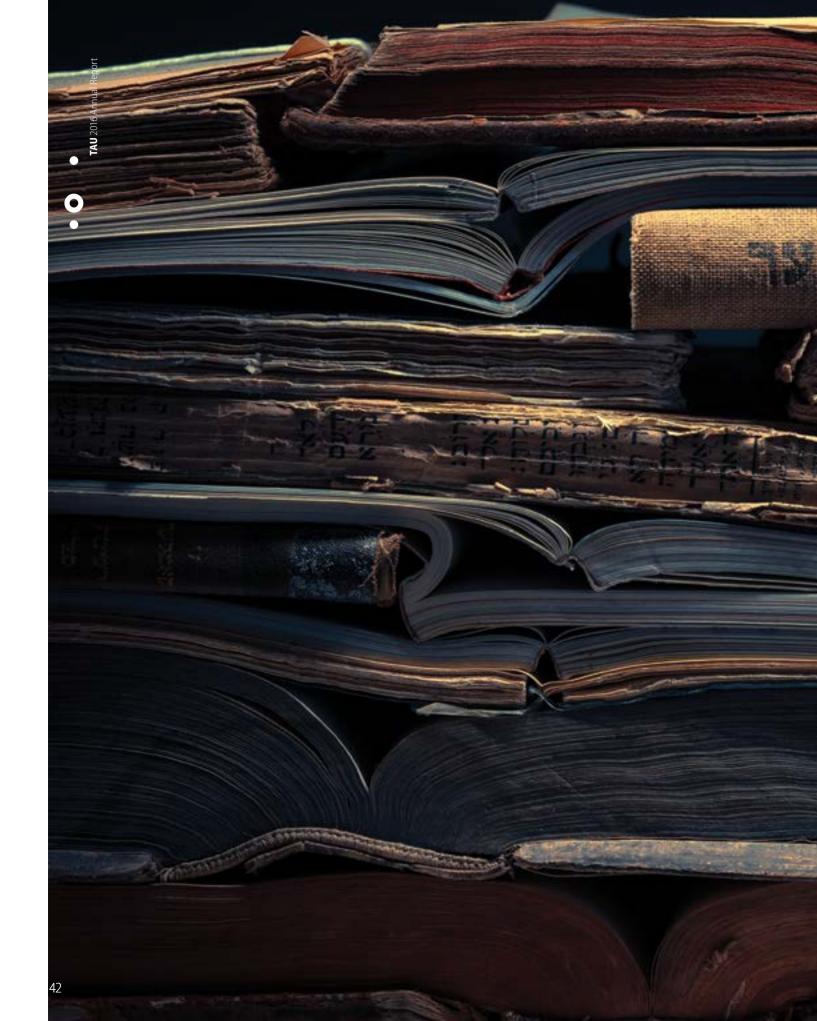
- Throughout the world, juridical systems overlap and are in constant flux. Dr. Lena Salaymeh and Dr. David Schorr (Law) of the David Berg Institute for Law and History are exploring what this means. For example, are alternative systems of conflict resolution replacing state-centered justice? How should legal professionals respond to this? These and other questions were discussed at a workshop held with the Frankfurt-based LOEWE research project of Goethe University.
- Researching the political and psychological dynamics of peace processes, **Dr. Nimrod Rosler** (Social Sciences) is taking a fresh approach. He will examine the influence of diaspora groups on intractable conflicts in their homelands in a joint project of the Department of Public Policy and Evens Program in Conflict Resolution and Mediation. Rosler contends that a survey of attitudes among Jewish and Palestinian communities in the US, France and Germany could enable the development of novel interventions to promote peace.



# 39

## How is trust created, and when it's broken, how can it be fixed?

Trust is the basis of any relationship, whether with an individual, business partner or government. **Dr. Noam Reisner** (Humanities) is co-founder of an international research group based at Aarhus University, Denmark, concerned with the interdisciplinary study of the politics, philosophy, social theory and literary-artistic treatment of trust and risk in Western societies. Delving into the nature of trust, the group's aim is to identify the conditions for its existence, how it is violated, and how it may be rebuilt to facilitate reconciliation, tolerance and a more harmonious political and social world.







# 40

## What did Bible stories have to do with the politics of the time?

Specializing in Jewish studies at the University of Chicago and Harvard University, new faculty member **Dr. Guy Darshan** (Humanities) looks at the Hebrew Bible in the context of the ancient Near East from which it emerged, as well as in the broader context of the ancient Mediterranean and Greek worlds. He found that eastern Mediterranean stories describing the foundation of cities and ethnic communities have no counterpart in ancient Mesopotamian, Hittite or Egyptian literature. They do, however, correspond strikingly with Biblical narratives. This places Biblical stories within a larger tradition of narratives aimed at strengthening political and social identity in the early first millennium BCE.

## Was Tantric Buddhism among India's prime exports?

41

Along with scholars from 10 countries, **Prof. Meir Shahar** (Humanities) and Prof. Yael Bentor of Hebrew University explore how Tantric Buddhism affected religious, artistic, literary, philosophical and material traditions throughout Asia since it emerged in India in the first millennium CE. The researchers are trying to determine to what extent this stream of Buddhism — as a vehicle for Indian culture at large — shaped other civilizations in the region beyond the religious sphere.

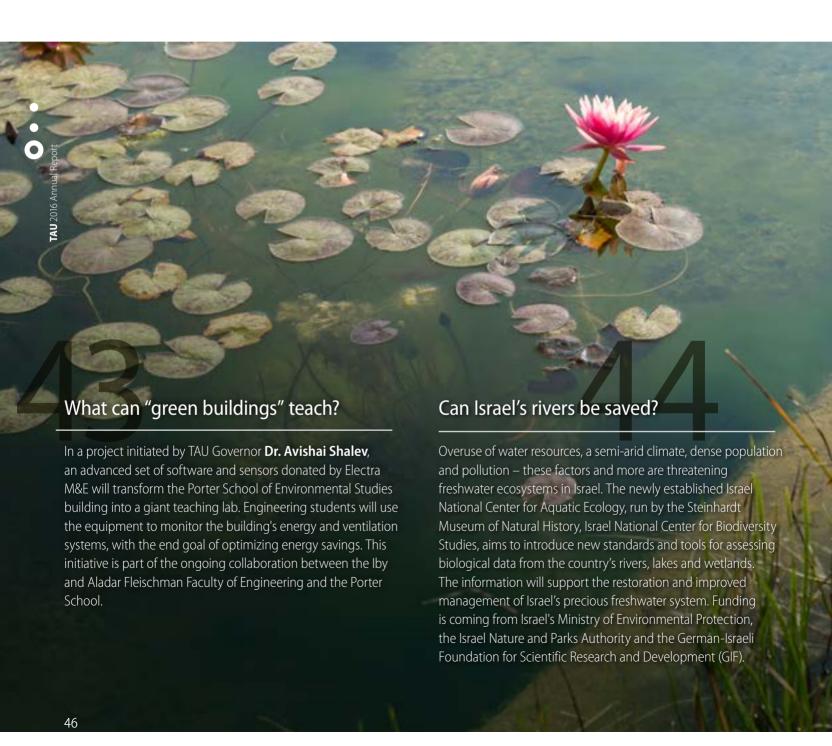
**ANCIENT WISDOM** 

# 42

#### If Confucius didn't say, who did?

It is known that the Chinese philosopher Confucius did not write The Analects bearing his name. Now, **Prof. Galia Patt-Shamir** (Humanities) is trying to determine how the preeminent text was written. Meanwhile, in her class on "Confucian Humanism," students apply theories they learn through volunteer work with children from low-income families, mental health patients and an organization fighting human trafficking

# ENVIRONMENT



## Can plants be coaxed into greater diversity?

In a study involving 62 scientists from 19 countries on 6 continents, **Prof. Marcelo Sternberg** (Life Sciences) reported a link between plant biomass – the total volume of vegetation within a given area – and species diversity in grassland ecosystems. They also found that moderately grazed grasslands yielded the highest diversity of plant species. With biodiversity currently at its lowest ebb, this finding might help us reverse the trend.

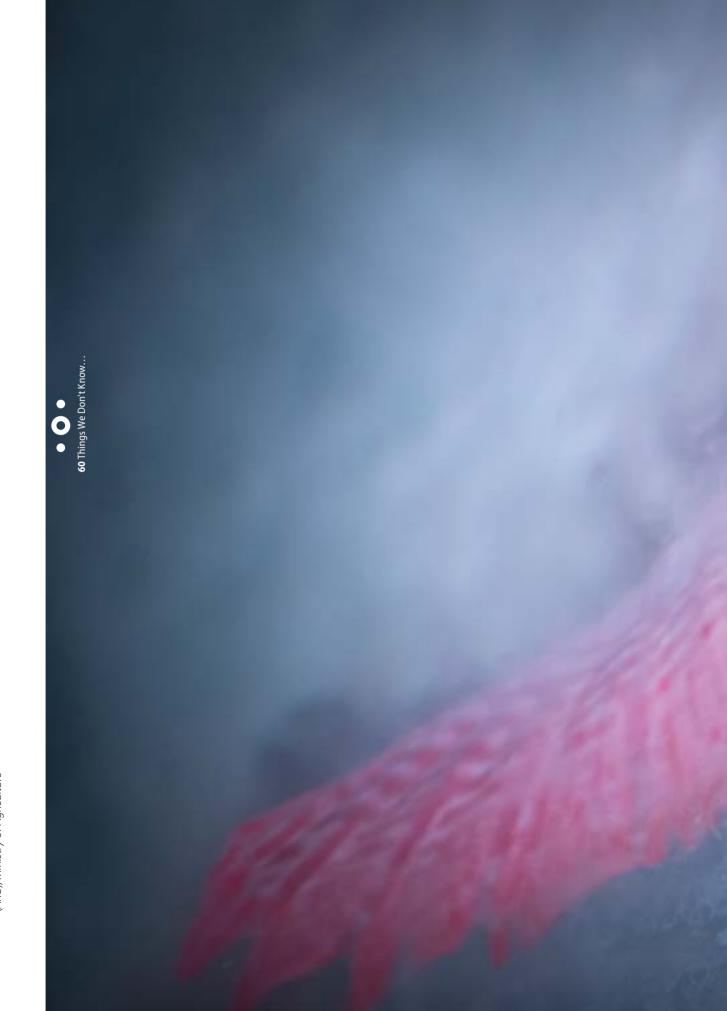


#### Can we waste not, want not?

- Water: Prof. Dror Avisar (Humanities), expert in hydrochemistry and wastewater reclamation, has initiated the Water Research Center. Its goals are to study water contamination, develop innovative technologies for removal of pollutants, and train the next generation of water specialists. Having already held successful workshops on water quality and security in Mexico, the Center is now conducting a large-scale survey on wastewater reuse in the arid Mexican state of Sonora.
- **Trash:** Viewing the issue from scientific, social and ethical perspectives, the Multidisciplinary Forum for the Study of Waste and Waste Management aims to combine relevant insights from diverse research areas to create a rational policy for waste management in Israel. PhD student **Idit Alhasid** (Porter School), who founded and manages the Forum together with Talia Fried of Bar Ilan University, focuses her research on managing household waste.
- Moshe Givoni (Humanities) is taking a fresh look at transport and mobility, exploring new ways of improving the travel experience to make it more productive.

  Their novel thinking about integrating information and communications technologies, and about investments in transport infrastructure, holds promise for a better balance between the benefits and costs of transport.
- Thoughts: Mind-wandering describes the drifting of our thoughts from the task-at-hand to self-generated thinking, such as day-dreaming, worrying or planning. Since this occurs during about 50% of our waking hours, Prof. Sharon Toker and PhD student Einat Yaor (both of Management) set out to discover what effect this has on work performance and outcomes, and whether mind-wandering has benefits, such as promoting creativity, in addition to its drawbacks.

A constructed wetland system to purify greywater for reuse in landscape irrigation, Porter School of Environmental Studies Building



Fish under study, photographed with the assistance of Assaf Barki and Avner Cnaani of the Volcani Center, Agricultural Research Organization (ARO), Ministry of Agriculture

# SAFETY

How can we prevent...

Food disasters?

Tilapia is a major world food source and one of the most important fish for aquaculture. Recent massive outbreaks of disease among wild and farmed tilapia have become a serious concern. **Prof. Eran Bacharach** (Life Sciences), participating in an international collaboration, has identified the cause of the disease as a novel emerging virus and is now trying to defeat it.

#### **Epidemics?**

Newly recruited from Yale, **Dr. Dan Yamin** (Engineering) applies tools from optimization and operations research to problems of public health such as the spread of disease. He seeks to mathematically determine which people, and where, are most likely to benefit from future resource allocation decisions, and to formulate an optimal public health plan.

#### Earthquake damage?

Early warning is the best protection we have against the potential devastation of earthquakes. Geoscientists **Dr. Alon Ziv** and **Dr. Hillel Wust-Bloch** (Exact Sciences) are operating an experimental seismic monitoring network in the earthquake-prone Dead Sea region that promises to generate the fastest and most reliable alerts ever provided for destructive seismic activity.

#### Plagiarism?

Can a teacher of literature reprint a poem in an exam? How much footage of someone else's film can be used in creating a documentary? These are questions for copyright law in the attempt to achieve balance between protecting authorship of original works, and allowing others to make use of them without prior permission. **Prof. Michael Birnhack** (Law), Director of the S. Horowitz Institute for Intellectual Property in Memory of Dr. Amnon Goldenberg, explores the legal development of fair use in Israeli law in an effort to set limits.

#### **Dysfunction?**

"Prevention Science" identifies risks and protective factors associated with human dysfunctions – such as substance abuse or domestic violence – before they occur. **Prof. Moshe Israelashvili** (Education), together with Prof. John Romano of the University of Minnesota, edited the new, seminal Cambridge Handbook of International Prevention Science, which presents a comprehensive global overview of the field and includes over 110 contributing authors from 27 countries.

#### Stroke?

**Prof. Silvia Koton** (Health Professions) is working with Prof. Josef Coresh and colleagues at Johns Hopkins University in the field of cardiovascular epidemiology, studying variations in the occurrence of stroke. They are looking at risk factors such as hypertension, diabetes and obesity, and identifying the groups most in need of reducing those risks. Prof. Coresh was brought to TAU by the Nirit and Michael Shaoul Fund for Visiting Scholars and Fellows.

#### Illness?

It is well known that maternal antibodies – transferred to the fetus via the placenta, and later to the newborn through breast milk – bolsters an infant's immune system. But the exact composition of the beneficial antibodies has remained unknown. Now, using a pioneering approach, faculty recruit **Dr. Yariv Wine** (Life Sciences) is elucidating the molecular makeup of maternal antibodies for possible use in new therapeutic agents and vaccines.



## We know E.T. went home. Now, can we find it?

Using TAU's Florence and George Wise Observatory along with telescopes in Chile and New Zealand, **Prof. Dan Maoz** and PhD candidate **Yossi Shvartzvald** (both of Exact Sciences) completed a 4-year study to measure the fraction of stars that host planets. They discovered that in the regions they probed in the Milky Way galaxy, about one-half of the stars have planets orbiting them. The next step will be to discover habitable Earthlike planets and search for biomarkers – molecular signs of extraterrestrial life.

#### What secrets lie behind cosmic dust?

**Prof. Sara Beck** (Exact Sciences) and an international team of astronomers reported the discovery of more than a million young stars forming in a hot, dusty cloud of molecular gases in a tiny galaxy near our own. The cluster has one billion times the luminosity of our sun, but is invisible in ordinary light, hidden by an extraordinary amount of dust.

# SPACE & MATTER

# Can we make particle accelerators as small and affordable as refrigerators?

Recently arrived from the University of Texas at Austin, **Dr. Ishay Pomerantz** (Exact Sciences) is setting up a new laser lab featuring light so intense that it can accelerate particles to high energies — activity that will advance material science, plasma physics and nuclear physics. His goal is to scale down the size and cost of such laser-based particle accelerators to make them more accessible to research institutions, hospitals for cancer treatment, and airports for contraband detection.

# How many subatomic particles are still waiting to be found?

A new type of subatomic particle consisting of five constituents known as quarks was discovered in the LHCb experiment at CERN, Switzerland. The discovery follows closely a prediction published earlier by **Prof. Marek Karliner** (Exact Sciences), in collaboration with Prof. Jonathan L. Rosner of the University of Chicago. The finding suggests the existence of many new particles of this kind, the properties of which may shed light on the strong nuclear force that makes the existence of atoms possible.





We know how animal learning developed.

But we don't know how it evolved into complex human cognition... yet.

Looking at learning from an evolutionary viewpoint, zoologist **Prof. Arnon Lotem** (Life Sciences) and his colleagues show how simple animal learning rules that evolved to improve foraging skills may also explain the human ability to learn language. Their research attempts to close the gap between animal and human cognition.

## Can learning to think analytically break the poverty cycle?

Analytical thinking is a natural skill that improves cognitive abilities. Yet, without conscious effort and practice, this skill may weaken and disappear. KEYS, a non-profit organization founded by members of the Linguistics Department and headed by **Prof. Outi Bat-El** (Humanities), teaches analytical thinking to underprivileged school kids. KEYS aims to boost the children's accessibility to higher education by enhancing their academic achievement, self-esteem, social success and personal well-being.

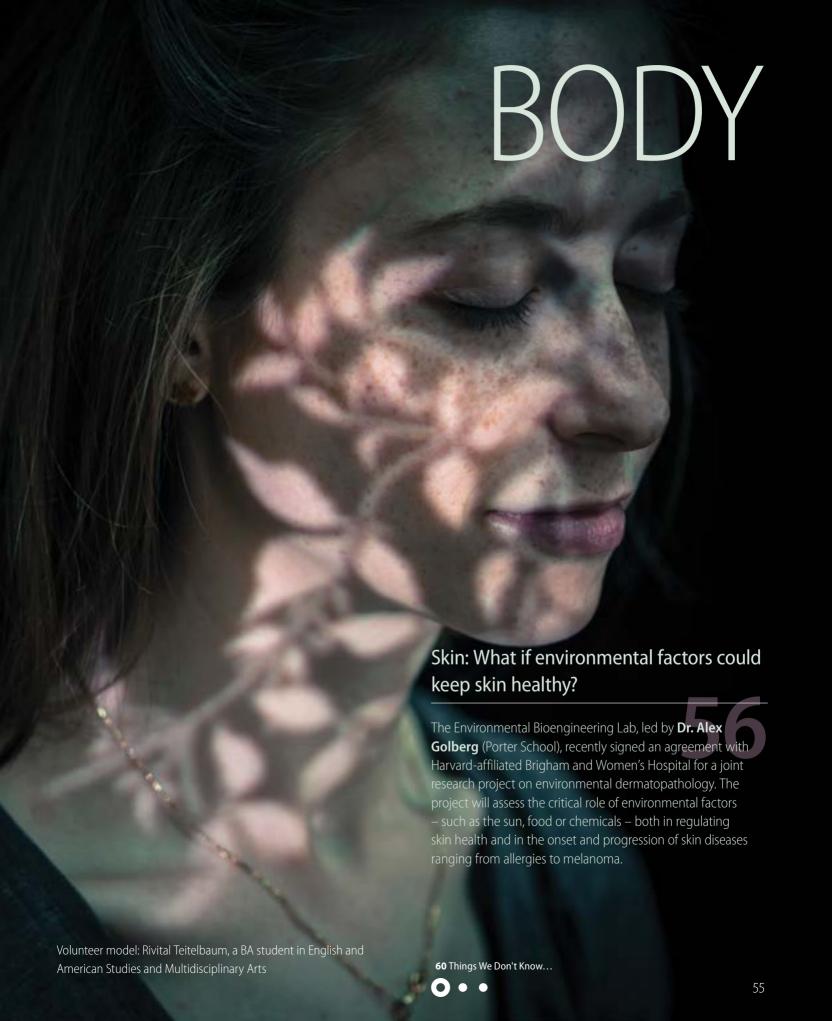
54

Bones: Can cannabis heal fractures?

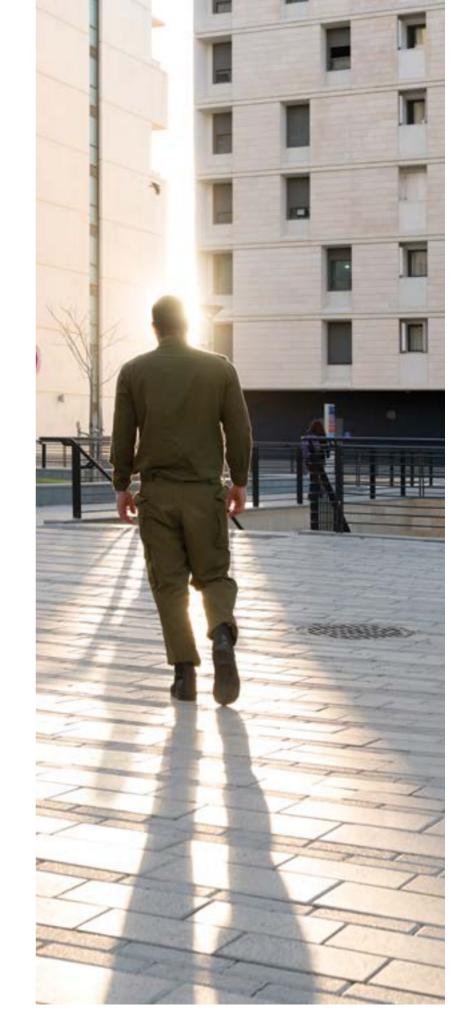
**Dr. Yankel Gabet**, Director of the Bone Research Laboratory (Medicine), has shown that cannabidiol (CBD) enhances the mechanical properties of bone tissue by promoting the maturation and structural integrity of collagen, a fibrous protein and main component of connective tissue. He is now assessing the therapeutic viability of several compounds to heal fractures and strengthen bones among sufferers of brittle bone disea

## Teeth: How can 3D printing help train dentists?

For over 100 years, dental students have practiced their manual dexterity skills on plastic teeth. Now, with a grant from the Israeli Ministry of Science, Technology and Space, a multidisciplinary TAU team is using 3D printing to develop more realistic teeth models with embedded sensors to indicate accuracy. It is a joint initiative of the Maurice and Gabriela Goldschleger School of Dental Medicine, School of Mechanical Engineering and Stanley Steyer School of Health Professions.



# ISRAEL



# Israel continues to flourish despite being beset by adversity. What makes it so special...?

#### Students change social policy

**Dr. Lia Levin** (Social Work) heads the award-winning Policy Practice Clinic, a collaboration between TAU and the Yedid civil society organization. Students working in the clinic gain valuable experience in changing social policy, working with parliamentarians, journalists and representatives of public and private sector management. The clinic has become a potent force for social change on issues such as police handling of sexual abuse complaints, and price controls on nutritional products for babies and children.

#### Everyone can be a patron of the arts

The Department of Art History, headed by **Prof. Assaf Pinkus**, has established the country's first-ever study track in Israeli art and its position on the world stage. The Tel Aviv Israeli Art Foundation, a new body established to support the program, launched a successful crowd-funding campaign that received donations from Israeli art collectors and art lovers everywhere.

#### Smart cities get cyber tools

**Prof. Issachar Rosen-Zvi** (Law) and urban planning scholar **Dr. Tali Hatuka** (Humanities) are collaborating on a project at the Blavatnik Interdisciplinary Cyber Research Center to develop a toolkit for the optimal design of cyber systems for smart cities in Israel. The researchers focus on what they define as the cornerstones of digitally savvy cities: planning, technology, local governance and privacy.

### Start-ups improve national health services

In something akin to a start-up incubator, **Dr. Tami Bar-Shalita** (Health Professions) heads the new two-year "Project Track" for MA students and practitioners of occupational therapy. Its aim is to promote and implement student ideas for improving the current state of occupational therapy services nationwide.

#### Film feeds national identity

Film studies researchers at the Steve Tisch School of Film and Television won a prestigious grant for a study on Jewish and Israeli visual cultures and identity-building from the era of silent films up to today's digital media.

#### Academia greens local government

Three organizations – the Porter School of Environmental Studies' Laboratory for Urban Innovation & Sustainability; Forum 15, which brings together 15 Israeli municipalities; and Next Step, which helps students transition from academia to employment – have banded together to establish a new internship program for helping students become agents of change. The students are guiding participating cities toward compliance with international climate agreements to reduce greenhouse gases and air pollution.

60 Things We Don't Know...





# EADERSIE P





#### What will ignite the spark of leadership...

#### In the student body?

58

- The Center for Social Leadership at the Ruth and Allen Ziegler Student Services Division helps students learn about the needs of society in academically accredited courses, and then apply that knowledge in local NGOs. Every year, 700 TAU students volunteer 50,000 hours in community projects run by 100 partner organizations, while developing skills for becoming proactive citizens of Israel.
- This year will see the graduation of the first cohort of the Schulich Leader Scholars, a Canadian-Israeli initiative that began in 2012 and now supports 28 undergraduate students at TAU. The program aims to create a network of technological and social leaders in both countries.

#### In math?

Launched with funding from the Office of the TAU President, MINT, the Mathematical Institute, conducts a variety of research-related activities, hosts high-profiles conferences and cosponsors "Mathematical Physics on Fridays," Israel's foremost event in the field.

#### In the arts?

60

To attract outstanding students to graduate research programs, BA students of Art History will now be able to begin their MA studies in their third academic year, while students at the David Azrieli School of Architecture will be able to combine their fifth year of studies with their first year of graduate studies.



Concept and production: Rava Eleasari
Text: hi-Text/Mimi Tanaman
Additional texts: Ruti Ziv, Melanie Takefman, Sharon Dom
Graphic Design: Issi Dvir
Photography: Yoram Reshef
Additional Photography: Albatross Aerial Photography
Administrative Coordination: Sharon Domb
Printing: Shavit Print

Issued by the Development and Public Affairs Division Tel Aviv University Ramat Aviv 69978, Tel Aviv, Israel publicat@post.tau.ac.il www.tau.ac.il

# TEL AVIV UNIVERSITY FRIENDS ASSOCIATIONS LEADERSHIP

## 0

#### **ARGENTINA**

Polly Mizrahi de Deutsch, President Argentinean Friends of Tel Aviv University

#### **AUSTRALIA**

**Dr. Victor Wayne, President**Australian Friends of Tel Aviv University (Victoria)

Andrew Whitten, President Australian Friends of Tel Aviv University (New South Wales)

#### **AUSTRIA**

**Dr. Hannes Androsch, President** Austrian Friends of Tel Aviv University

#### **BRAZIL**

**Eduardo Wurzmann, President**Brazilian Friends of Tel Aviv University São Paulo

**Lea Klabin, President**Brazilian Friends of Tel Aviv University Rio de Janeiro

**Dr. Mario Gurvitz Cardoni, President**Brazilian Friends of Tel Aviv University
Porto Alegre

#### **CANADA**

Jeff Wagman, National President

Canadian Friends of Tel Aviv University Chair, Ontario and Western Canada

Judge Barbara Seal, CM, National Chair Canadian Friends of Tel Aviv University (CFTAU)

Claire Dalfen, President
Canadian Friends of Tel Aviv University
Ottawa, Quebec and Atlantic Canada

#### **ECUADOR**

Raquel Katzkowicz, Liaison Ecuadorian Friends of Tel Aviv University

#### **FRANCE**

**Prof. François Heilbronn, President** French Friends of Tel Aviv University (AFAUTA)

#### **GERMANY**

**Uwe Becker, President** German Friends of Tel Aviv University

#### **HONG KONG**

**Sharon Ser, Chairperson** Hong Kong 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

#### **KAZAKHSTAN**

**Dr. Alexander Machkevitch, President** Kazakhstani 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

#### **PANAMA**

Millie Bettsak, President Panamanian Friends of Tel Aviv University

#### **PERU**

Roberto Lerner, Liaison Peruvian Friends of Tel Aviv University

#### **RUSSIA**

Viktor Vekselberg, President Russian Friends of Tel Aviv University

#### **SOUTH AFRICA**

Jonathan Osrin, Chairman South African Friends of Tel Aviv University

#### **SPAIN**

Patricia Nahmad, Co-President Isaac Querub, Co-President Spanish Friends of Tel Aviv University

#### **SWEDEN**

Peter Seideman, President Swedish Friends of Tel Aviv University

#### **SWITZERLAND**

Patrick Loeb-Meyer, President Swiss Friends of Tel Aviv University

#### UK

Richard Anton, Chair Elect The Tel Aviv University Trust

Glen Watson, Chairman, Scottish Group The Tel Aviv University Trust

#### **URUGUAY**

**Bernardo Faincaig, President** Uruguayan Friends of Tel Aviv University

#### USA

**Richard Sincere, National Chairman** American Friends of Tel Aviv University

VERSITY FRIENDS