

The Boris Mints Institute
for Strategic Policy Solutions to Global Challenges
 The Gershon H. Gordon Faculty of Social Sciences
 Tel Aviv University

FOOD
SECURITY



CONFLICT
RESOLUTION



RENEWABLE
ENERGY



**THE BORIS MINTS
 INSTITUTE**
 FOR STRATEGIC POLICY
 SOLUTIONS
 TO GLOBAL CHALLENGES



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➤ Letter from BMI Founder and President – Dr. Boris Mints*



First of all on this very significant personal day, let me thank the heads of the Tel Aviv University: Prof. Joseph Klafter (President of the Tel Aviv University), Prof. Jacob A. Frenkel (Chairman of the Board of Governors), Prof. Yaron Oz (Rector), Prof. Tami Ronen-Rosenbaum (Dean of the Faculty of Social Sciences), members of the international board of advisors, consisted of brilliant government and political leaders, including those present: ex-president of the Czech Republic – Vaclav Klaus, ex-premier of Armenia – Armen Darbinian, ex-vice-premier of Bulgaria and the head of the supervisory board of EBRD – Simeon Djankov; co-founder and chairman of the Board, EOS (EnergyO Solutions) Russia – Seppo Remes and those who in their everyday duty provide the incredible work of the Institute and uppermost the outstanding scientist, professor Itai Sened, who moved from the United States of America in order to lead the Institution. The goal that we have set for ourselves is very challenging yet significant – determination and resolution of the problems preventing the sustainable and equitable development of the civilization. Up to our understanding, the world's economy faces fundamental changes, the cause of which is also the development of alternative energy sources, new methods for extraction of hydrocarbons, breakthrough advancement in IT technologies, genetics, biology as a whole, the formation of nano-industry as well as geopolitical challenges, such as refugees, hunger, etc.

All of this will clearly require the reformation of the international institutions, establishment of stricter behavior rules and serious changes of the authority of the state management bodies. It is necessary to reallocate the authority of these institutions by making an equal division between the international institutions and the municipalities. Before today's inauguration of the Institution it took us 2 years of hard-thinking and really strong organizational efforts. In these 2 years, I often needed to answer questions: Why exactly Tel Aviv University? And again expressing big thanks to the members of this educational and research center, I can tell you why. Regulations and the team gave us the most comfortable conditions. Where if not in Israel, where the nowadays civilizations originated, the Scientific and Research Institution, dealing with challenges that the civilization is facing, should be located? And where if not in Israel, which is famous for its non-alignment, meaning that the minds of the scientists are fully independent from the political influence?

* Dr. Mints's speech at BMI inauguration, May 19th, 2016.



➤ Letter from Head of BMI, Prof. Itai Sened



The Boris Mints Institute for Strategic Policy Solutions to Global Challenges was founded only a year ago and inaugurated only four months ago thanks to the generous gift of Dr. Boris Mints of Moscow. In the very short time since its inception, BMI had a huge impact on the lives of many and will continue to expand the reach and the impact to many more. The key to this tremendous success is incredibly simple as most keys to almost any success. We specialize in promoting research that matters!!!

Academia has long been preoccupied with innovative research. Yet, the impact of this innovative research is rarely assessed. The U.S. congress and many other political and professional decision making bodies, have long noticed that much research never leads to anything, no matter how good it is. The response to this well known phenomenon is usually two folds: committees of organizations that grant research funding do their best at assessing the merit of different grant proposals and grant funding only to the best proposals. Political decision making bodies often cut funding across the board claiming that the research is not useful enough for what they care for. Both approaches are problematic. Grant proposal committees can only work with the proposals they get and have a very limited set of tools to encourage research of any kind and of the applied type in particular. Applied research is simply not very popular among academics for a number of reasons. Cutting the budgets does not help much as it has long been established that Research and Development is the best investment any society can engage in.

Our approach is different: we live our research day by day! We talk to the highest placed decision makers and every member of every society that might be affected, to make sure we understand the pressing issues that preoccupy them. At the same time, we are deeply involved in the research communities at Tel Aviv University and around the globe. Then, we apply the simple following rule: we support research that is cutting edge on the one hand and is immediately relevant to some major challenge societies around the globe are facing on the other hand. We support only research that matters and this is why our research matters. It is as simple as that!

In the years to come we intend to do a whole lot more. I must conclude this letter with heart felt thanks to Dr. Mints for the generous grant to establish the Institute, and all of the researchers that have responded to our call for proposals. Those judged to have the merit to get support and their critically important research are reviewed in this report and our debt to them is simple to characterize: we only live by their success.

Professor Itai Sened

Head of the Boris Mints Institute for Strategic Policy Solutions to Global Challenges
Chair of the Department of Public Policy,
Founding Head of the School of Social and Policy Studies,
Tel Aviv University in Israel



➤ BMI Vision

The Boris Mints Institute was founded with the intention to encourage research, planning and innovative thinking in order to promote a significant positive change in the world. BMI is focusing on designing strategic innovative plans to enhance the welfare of communities around the globe.

The world is thirsty for innovative, groundbreaking policy solutions to promote environmental sustainability, ensure food security, health and energy to all, and eradicate poverty. Yet, there is a dearth of applied, practical, policy-directed research on these issues. BMI will address this challenge by operating on two levels: creating unique research grants and scholarships, as well as organizing disseminations and conferences focusing on the contemporary global challenges.

The BMI support is given to highly applied, practical and solutions-driven research, which is conducted by bright PhD students under the supervision of internationally renowned senior scientists. The Institute will ensure that no good idea goes to waste due to lack of funding and bring Israel-developed technologies to the world's neediest populations – thereby enabling Israel to harness its renowned startup mentality in the service of humankind.

As a globally influential research institution, Tel Aviv University is committed to applying its know-how and experience toward solving real-world problems, and is uniquely positioned to operate the proposed Institute.

BMI's DNA requires that its innovative ideas be transferred in real time to policy makers. BMI has already held several academic events and extended significant support for research projects in Food Security, Renewable Energy and Conflict Resolution.





► BMI Structure

Steering Committee



Dr. Boris Mints, President

Ph.D. in Engineering. Previously the Chairman of Board of Directors of the "Otkritie Stock Broker" OJSC. Co-Founder of "Otkrytie" Investment Group and Chairman of the Board. Founder of "01Group". Chairman of the Board of Patrons of the Conference of European Rabbis. Awarded the Dashkova's Prize "Philanthropist of the Year" and Honorary Fellow of Tel Aviv University.



Prof. Raanan Rein, Vice President of Tel Aviv University

An Elias Sourasky Professor of Latin American and Spanish History, Vice President of Tel Aviv University and the Head of the S. Daniel Abraham Center for International and Regional Studies. Rein is the author and editor of more than thirty books and well over a hundred articles in academic journals and book chapters, in several languages. He is a member of Argentina's National Academy of History, and former President of the Latin American Jewish Studies Association (LAJSA). In 2016 he won the Reimar Lüst Award (co-sponsored by the Alexander von Humboldt Foundation and the Fritz Thyssen Foundation).



Prof. Tami Ronen-Rozenbaum, Dean of the Faculty of Social Sciences, Tel Aviv University

A researcher in the field of the Cognitive Behavioral approach and Positive Psychology, focuses on the function of self-control skills, positive emotions and social support as a way of overcoming distress and developing happiness. In her research, Prof. Ronen-Rozenbaum links a complex theoretical model of understanding human strengths and coping abilities to techniques for developing useful interventions in the field.



Mrs. Irina Buylova, Representative of BMI President

Executive director of Yegor Gaidar Foundation (Russia), a prominent journalist and internationally recognized expert in building effective interaction models for the Russian and international non-governmental organisations and educational, economics and social development institutions. In the 1990 – 2000s covered, as a journalist for the leading Russian media, social policy and development issues in the context of the turbulent Russian state economic and political transition.



Prof. Itai Sened, Head of BMI, Founding Head of the School of Social and Policy Studies and Chair of the Department of Public Policy, TAU

Prof. Sened is the Founding Head of TAU's new School of Social and Policy Studies and Chair of the Department of Public Policy at TAU's Gordon Faculty of Social Sciences. He recently returned to TAU after serving for 12 years as Director of the Institute for New Institutional Social Sciences at Washington University, US, established by economics' Nobel Laureate Douglass C. North.



International Academic Committee



Prof. Yossi Rozenwaks, Dean of the Faculty of Engineering, TAU.

Research interests: Nanotechnology, Electrostatic force microscopy; Atomic force microscopy; Nanoscale charge injection in memory devices; Solar Cells; Organic semiconductor devices; Biological Field effect Transistors; Charge carrier dynamics in semiconductors and recombination processes.



Prof. Danny Chamovitz, Dean of the Faculty of Life Sciences, TAU.

Founder of the Manna Center Program for Food Safety and Security. Main research interests: Understanding the role of the COP9 signalosome (CSN) in regulating development and the role of anti-cancer chemicals found in plants in the plant's life.



Prof. Miranda Schreurs, Professor of Environment and Climate Policy, Bavarian School of Public Policy, Technical University of Munich

Previously the Director of the Environmental Policy Research Center and Professor of Comparative Politics at the Freie Universität in Berlin and an Associate Professor in the Department of Government and Politics, University of Maryland. Schreurs' work focuses on comparative environmental politics and policy in Europe, the US, and East Asia. A member of the German Advisory Council on the Environment.



Prof. Itai Sened, Head of BMI, Founding Head of School of Social and Policy Studies and Chair of the Department of Public Policy

Research interests: Professor Sened specializes in the study of institutions and how they affect policy at all levels. Institutions may be formal institutions at the national or local level, but can also be informal institutions such as social norms and cultural habits that may enhance or impede economic development and social prosperity.

International Advisory Board



Prof. Armen Darbinyan, Chairman of the Board, Rector of the Russian-Armenian University, Yerevan, Armenia

An initiator of economic and political reforms in Armenia, including privatization, development of the private sector and the formation of governmental institutions. The author of national legislation regarding banking, stock companies, anti-trust and state regulation of public services, and others. The initiator and reformer of telecommunications, agriculture, infrastructure and tourism in Armenia. An international expert on economies in transition and awardee "Young Global Leader" of the World Economic Forum.



Dr. Simeon Djankov, Director, Financial Markets Group, London School of Economics

Declared “Bulgaria’s Most Successful Politician” and awarded the President’s Award of the World Bank. Visiting Professor, London School of Economics, Department of Finance. Previously a visiting Fellow in the Peterson Institute for International Economics, Washington DC. Former Deputy Prime Minister and Minister of Finance of the Republic of Bulgaria.



Mr. Václav Klaus, Former President of the Czech Republic, Head of The Václav Klaus Institute

An academic economist by training, he was forced out of the Czechoslovak Academy of Sciences after the Soviet invasion in 1968 after the Prague Spring era. He returned after the so-called ‘Velvet Revolution’ of 1989, as one of the founders of the Civic Forum Movement. He was the country’s first non-Communist Finance Minister and served from 1992 to 1997 as Prime Minister of the Czech Republic. In 2003 Klaus was elected President of the Czech Republic and reelected for a second term in 2008. Since 2012 the Head of The Václav Klaus Institute, which is a liberal-conservative think tank with its own research study activities, seminars and conferences. He is a member of the Mont Pelerin Society. He has published more than 30 books and received many doctorate degrees and international awards in various countries.



Mr. Seppo Remes, Co-Founder and Chairman of the Board, EOS Russia

A Finnish citizen, has Licentiate of Economics degree from Turku School of Economics. Has worked in Russia from 1993-2015. Former CEO of the Investment Company “Vostok Energo” and Director of “Vostok Nafta”, both investing in the Russian energy sector. Remes has been a board member of many Russian companies: He was elected as the Director of the Year in 2013 by Independent Directors’ Association together with Russian Council of Industrialists and Entrepreneurs. In 2007 he founded, together with partners, the “EOS Russia” investment company which is listed at First North, Stockholm, and has chaired the Board of the company ever since. He is an Honorary Doctor from the Russian Plekhanov Academy of Economy, Moscow and Turku School of Economics, Finland.



Prof. Itamar Rabinovich, Founder and President of the Israel Institute, Former Ambassador of Israel to USA and President Emeritus of Tel Aviv University

Itamar Rabinovich, the president of the Israel Institute (Washington and Jerusalem), is Israel’s former Ambassador to the United States, former Chief Negotiator with Syria in the mid 1990’s and the former president of Tel Aviv University (1999-2007). Currently he is Professor Emeritus of Middle Eastern History of Tel Aviv University, Distinguished Global Professor at NYU and a Distinguished Fellow at the Brookings Institution. Prof. Rabinovich has been a member of Tel Aviv University’s faculty since 1971 and served as an Ettinger Professor of the Contemporary History of the Middle-East, Chairman of the Department of Middle Eastern Studies, Director of the Dayan Center for Middle Eastern and African Studies, Dean of Humanities and Rector.



Management



Prof. Itai Sened, Head of BMI, Founding Chair, School of Social and Policy Studies and Chair of the Department of Public Policy at TAU

Founding Head of TAU's new School of Social and Policy Studies and Chair of the Department of Public Policy at TAU's Gordon Faculty of Social Sciences. He recently returned to TAU after serving for four years as the Chair of the Department of Political Science and 12 years as Director of the Institute for New Institutional Social Sciences at Washington University, US, established by economics' Nobel Laureate Douglass C. North.



Dr. Alexander Pesov, Representative of BMI President

Dr. Pesov has a Ph.D. in Biology and is the author of several scientific publications. Dr. Pesov has previously worked as a journalist, writer and editor of several top soviet journals and newspapers and the vice-president of the International press-centre and club in Moscow. From 1998 till 2012 Dr. Pesov was an advisor to the prime-minister of the Russian Federation – Eugene Primakov, the chief of staff of the Ministry of Agriculture of the Russian Federation and Vice-Governor of the Voronezh region.



Dr. Haim Ben-Yaakov, Representative of TAU President

Dr. Ben-Yaacov is a Senior executive for regional Development and Public Affairs at Tel Aviv University. He served as CEO of the Euro-Asian Jewish Congress, Head of the Jewish Agency for Israel in Moscow and the Baltic States and as Educational Adviser for the Jewish Agency for Israel. Founded and Manged an Institute for Jewish Studies and Training Community Leaders.



Ayelet Fishman. Adv., Director of Research and Development

She received her LL.B. from the Hebrew University in Jerusalem and her M.A in Public Policy, with distinction from Tel Aviv University. She formerly served as the National Supervisor of Elections at the Israeli Ministry of Interior.



➤ Research Grants and Scholarships

From sustainability issues to intractable social illnesses, the main activity of the Institute is to pursue innovative, interdisciplinary and broad system scope research, followed by the publication of position papers with an emphasis on timely implementation. Research will be conducted by PhD students under the supervision of expert scholars in fields such as applied economics, environmental sustainability and international development. At the outset, BMI will focus on three main expertise areas: Energy, Middle Class Crisis and Conflict Resolution and Food Security Sustainable Development. In each of these fields, BMI is collaborating with an academic partner from TAU, which matches the support given by BMI to researchers and students, thus doubling the resources of each research project.



Food Security

Partner: Manna Center Program for Food Safety and Security, headed by Prof. Nir Ohad, Faculty of Life Sciences

Master's Degree Scholarships:



Shira Bukchin, Department of Public Policy – *A model of smallholder agriculture exposure to climate change impacts*

Shira has a B.Sc. in biology and is now working on her master's degree in Public Policy. Much of the literature in agricultural development and international food security focuses on the impacts of climate changes on smallholders and ways in which they can adapt to climate change, however the premise underlying this body of work has not been systematically tested or quantified- it remains unclear how many smallholders will experience significant climate change impacts, and to which extent. In the research we are working on a quantitative analysis of these exposure measures, we are constructing a global model of smallholder agriculture exposure to climate change impacts, under a range of different scenarios that are calibrated through empirical analysis of several cross-sectional and longitudinal data sets.



Yoav Rothler, Department of Public Policy – *Can Information Help Reduce Imbalanced Application of Fertilizers in India?*

Yoav's research studies the effectiveness of India's large Soil Health Cards Program to encourage all 140 million farmers in India to apply a balanced dose of fertilizers to their crops based on soil tests carried out in their own land. In order to gain some first empirical evidence on the performance of the program, Yoav took part in a randomized controlled trial in the Indian state of Bihar that approximated the government's intervention. Results show that providing Soil Health Cards has very little effect on farmers' fertilizer use in the next season. Lack of trust in the new information and a limited ability to understand the scientific information seem to be the main reasons for not adopting the scientific recommendations.



Ph. D. Scholarships:



Bell Weiss, Department of Geography and Human Environment – *Developing an Innovative Spectral Means to Discriminate Organic from Non-Organic Vegetables at the Consumer Level*

As a PhD student in the fields of Chemistry and Environment, Bell finished her M.A. Thesis with distinction and her research has won several prizes. Bell has already started working at the Remote Sensing Laboratory (RSL) under the supervision of Prof. Eyal Bendor. In this research, the aim to develop a spectral-based technique which a costumer can easily use on the market level. By this method, the consumers would be able to ascertain the qualities, traits, healthiness and sustainability of purchased foods. The study includes defining spectroscopic differences between organic and non-organic vegetables, grown in equivalent areas under similar conditions. The study's results would then be used to develop a simple spectral assembly for detecting the organic nature of the products in question and serve in determining the differences between organic and non-organic vegetables. These results would also assist in eliminating misperceptions in the growing market for these products.

Research Grants:



Prof. Eran Bacharach, Department of Cell Research and Immunology – *Vaccine development for the protection of Tilapia against Tilapia Lake Virus*

Tilapia is an important global food source due to their fast growth, tolerance for high-density aquaculture and relatively high resistance to (viral) diseases. As such, tilapia is important to domestic and global food security and serves as an inexpensive source of dietary protein, including in the developing world. In recent years, however, massive losses of tilapia were described in Israel and South America with no clear etiology. In collaboration with the Dr. Avi Eldar (Kimron veterinary institute) and Prof. Ian Lipkin (Columbia University), we discovered the etiological agent of this disease, a novel virus that we named Tilapia Lake Virus (TiLV). We were able to isolate the virus from diseased fish and to induce a lethal disease in healthy fish that were exposed to the virus. The identification of TiLV is central for the detection and containment of this pathogen and for vaccine development. The support from The Boris Mints Institute for Strategic Policy Solutions to Global Challenges and The Manna Center Program in Food Safety and Security at Tel Aviv University supports the fellowship of a PhD student, involved in this research.



Dr. Ram Fishman, Department of Public Policy –
*Can Information Help Reduce Imbalanced Application of
Fertilizers in India?*

The imbalanced usage of chemical fertilizers in India is widely blamed for low yields, poor soil health, pollution of water resources and a public expense on subsidized amounting to about 1% of India's GDP. To address the issue, the government of India is investing in large scale, expensive programs of individualized soil tests and customized fertilizer recommendation, with the hope that scientific information will lead farmers to optimize the fertilizer mix. We conducted a randomized control trial in Bihar to provide what we believe to be the first evidence on the effectiveness of the program, but found no evidence of any impact on fertilizer use. The lack of impact can be attributed to a lack of understanding, lack of confidence in the information's reliability, or other factors, like costs, that inhibit farmers from switching fertilizer choice even if the information shifts their preferences. We provide evidence that suggests lack of confidence is the main factor inhibiting farmers' response.



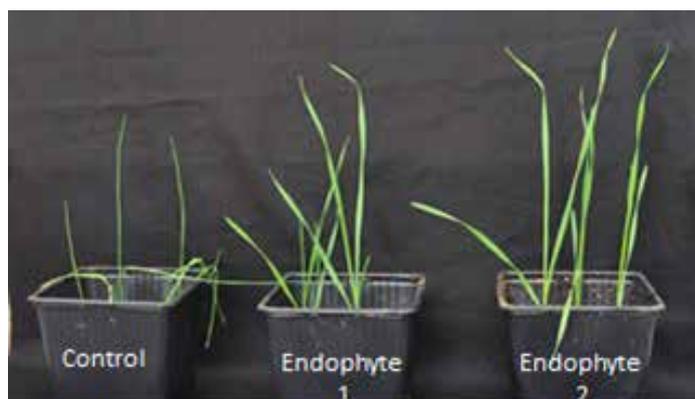
Dr. Eitan Millet & Dr. Anna Minz-Dub, Institute of cereal
Crops Improvement – *Cloning of new wheat rust resistance
gene using the novel MutRenSeq method*

Immigrated to Israel in 1995 from Chelyabinsk, Russia. Received B.Sc. in 2007 (Biotechnology) and Ph.D. in 2015 (Molecular Biology and Ecology of Plants) from Tel Aviv University, working on plant pathogenic fungi. Current work as a scientist at ICCI is focused on exploitation of wild wheat relatives for wheat improvement. Specific project, aimed at cloning new wheat resistance genes, using novel technology of MutRenSeq, is carried out thanks to the support of the Boris Mints Institute.



Prof. Amir Sharon, Head, Institute for Cereal Crops Improvement, Faculty of Life Sciences – *Endophytic fungi for increased crop production and plant resistance to diseases and stresses*

Prof. Sharon is the head of the Institute of Cereal Crops Improvement at Tel Aviv University, and a professor in the Department of Molecular Biology and Ecology of Plants. His lab in Tel Aviv has been spearheading the study of fungal programmed cell death and the biology of Botrytis, a fungal pathogen that causes devastating plant diseases. In the last years he developed research on fungal endophytes, a group of fungi that lives within plants and can help plants to cope with stresses and diseases. This study has already led to the identification of beneficial species, which can be developed into commercial growth promoting products. Endophytes are microorganisms (bacteria and fungi) that reside within plants. Among them are species that contribute to plant's vigour and ability to cope with pests and harsh environments. We have found two species of endophytic fungi in wild plants, which can boost wheat growth and stress tolerance. Overall, wheat plants that contained the new endophytes from wild plants showed a remarkable increase of growth, and extended survival under salt and water limiting conditions. In this project, we will develop methods for optimization of the endophytes and study their mode of action. Endophytes help wheat plants to grow without water.





Renewable Energy

Partner: Renewable Energy Centre, headed by Prof. Yossi Rozenwaks, Dean of the Faculty of Engineering; Member of the BMI International Academic Committee.

Master's Degree Scholarships:



Brenda Dana, Physical Electronics, Faculty of Engineering
– *Double Fano resonance optical devices for solar energy harvesting.*

Brenda is a PhD student at Tel Aviv University. In this study, Brenda and her advisor proposed and numerically demonstrated a geometrically simple asymmetric IMI structure able to support a double FFR spectral line-shape. The overall line-shape is determined by the periodicities of the gratings at the metal-insulator interfaces of the structure, and also by their unit-cell configuration. The location of the resonances is related to the gratings periodicities as was shown by the research simulations. The asymmetry parameters are determined mainly by the shape of the unit-cell of each grating. Here, a straight forward mapping between these shapes to the asymmetry parameter does not exist, and so to get a desired exact line-shape one needs to use optimization procedures in the available parameters space. The fact that the double FFR line-shape generally exhibit sharper features compared to the single FFR line-shape, together with the possibilities of tuning its features, and the simplicity of the structure, should make it relevant for many possible applications, such as sensing, field enhancement and slow-light devices.



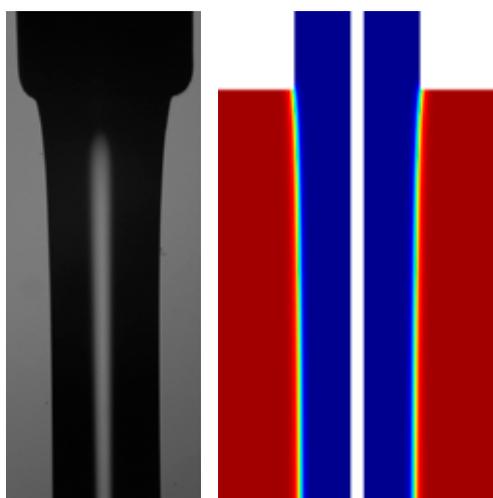
Oz Habiby, School of Mechanical Engineering, Faculty of Engineering – *Improving efficiency of bio-fuels productions from macroalgae cultivations by means of intensive grow for enhancement of the photosynthetic process*

Thanks to the generous support of BMI we were able to design and built in the past few months two experimental systems. First, a laboratory experiment in the Prof. Liberzon's laboratory has been designed to examine the influence of different light parameters on the growth rate of the seaweed culture, mimicking the intensification of the offshore system. Controlling the light source we plan to prove that the grow rate of the algae can be enhanced and the bottleneck in the cycle from marine biomass to bio-diesel product can be breached. Second, an off-shore field experimental system has been designed to prove the concept of offshore marine agriculture. This system will be deployed near the shore of the Tel Aviv power station (Reading). The system will grow macro-algae offshore using the intensification by airlift pumping and mixing. We are expecting to obtain the results and we appreciate the support of the Boris Mints Institute, which made these prototype studies possible.



Ron S. Harnik, School of Mechanical Engineering, Faculty of Engineering – *First-order model of Free-Jet hydrodynamic Evolution for Heat Transfer prediction and design in solar cells and desalination applications*

Ron is a M.Sc. Student under the supervision of Dr. Herman D. Haustein and has won several awards and grants noting his academic achievements. In light of the increase in incident heat flux, failure to manage waste heat reduces conversation efficiency of highly focused CPV and leads to cell deterioration. The goal of this study is the development of a simple free jet cooling model via deconstruction of the flow. The method involves simulating (DNS) a free jet's three stages: pipe evolution, relaxation and contraction in flight, impinging heat transfer; validated by comparison to previous work and experiments. The flow and heat transfer models are constructed by identifying inherent self-similar scales (for simple relations), and serve as tools for designing a modular impinging jet array which cools various size CPV cells.



Maya Livshitz, School of Mechanical Engineering, Faculty of Engineering – *Structured catalysts in non-adiabatic reactors for alternative fuels production*

Maya is a Ph.D. Student in the School of Mechanical Engineering at Tel Aviv University, and recipient of TAU's President Scholarship for Ph.D. students in Renewable Energy. Her research focuses on heat transfer in porous media with applications in renewable energy. Her M.Sc. thesis won the student project competition by the Israeli Sustainable Energy Society. Solar volumetric receivers offer a potential for high conversion efficiency in thermo-solar (CSP) power plants, but so far this potential has not been realized. An investigation of different porous structures as volumetric absorbers shows wide differences in convective heat transfer, leading to a wide range of possible receiver efficiency. The commonly used ceramic honeycomb (parallel channels) structures are found to be unfavorable due to low convection. The second commonly used structure of ceramic foam is questionable due to disagreement between convection correlations. A new geometry of dense wire mesh is proposed with superior convection and the potential to achieve higher receiver efficiency exceeding 90%.



Ph. D. Scholarships:

Assaf Hochman, Porter School for Environmental Studies – *Analysis of large-scale climate time-series and their downscaling over the Eastern Mediterranean*

Assaf is currently a PhD student at under the supervision of Prof. Pinhas Alpert and Prof. Hadas Saaroni. His dissertation title: "Analysis of large-scale climate time-series and their downscaling over the Eastern Mediterranean". Assaf's Current areas of interest are renewable energy, climate change, and adaptation to climate change. His specific focus is on Eastern Mediterranean coastal climate variability with special emphasis on wind variability in the 21st century. Assaf has recently presented his findings in Grenoble, France, European Research Course on Atmospheres (ERCA): "Downscaling Eastern Mediterranean coastal atmospheric variables for present and future scenarios" and in Athens, Greece, MedCLIVAR: "Reconstruction of winter temperature in Jerusalem and the probability of Wavelet Analysis to detect periodicities in climatic time series".



Hadar Traugott, Faculty of Engineering – *Analysis of large-scale climate time-series and their downscaling over the Eastern Mediterranean*

Hadar completed a M.Sc. in mechanical engineering in the field of fluid dynamics, at the Tel Aviv University. Since then has worked as a researcher at ICL (Dead Sea Works) R&D. Hadar's Ph.D. research focuses on the subject of "Off shore biorefinery for the biofuel production" under the supervision of Prof. A. Liberzon and Dr. A. Golberg. The goal of the research is to develop tools and technologies to increase the net energy return of offshore biorefineries for biomass production. Current strategies for food production and renewable energy generation rely heavily on the classic land based agriculture. However, land availability is the limiting factor. An expanding body of evidence has demonstrated that marine macro algae can provide a sustainable alternative. The hypothesis behind our research is that external fluid assisted mixing using an alternative energy source could intensify the offshore macro algae biomass production for bioenergy application. The results of the research could lead to the development of novel technologies to generate bioenergy including transportation biofuels from this unexplored resource.



Conflict Resolution and the Middle Class

Partner: The Evans Program for Conflict Resolution, headed by Prof. Ephraim Yaar, Faculty of Social Sciences

Master's Degree Scholarships:



Heela Goren, School of Education – *Global citizenship for all? The emergence of the GCE gap.*

Heela had recently submitted her thesis entitled "Global citizenship for all? Emergence of the GCE gap" as part of her M.A in education policy and administration at the Tel Aviv University School of Education. The thesis explores the differences in the ways teachers of students from various socio-economic backgrounds perceive global citizenship education. Heela found that teachers of students from strong socio-economic backgrounds perceived global citizenship education to be imperative for their students, as opposed to lower SES students who were perceived by their teachers to be less capable of participating in the global society. Heela has presented her thesis at the annual convention of the North American Society for Comparative and International research in Education, and also at the World Convention of Comparative Education Societies which will be held in Beijing.

Research Grants:



Dr. Sami Miari, Department of Labor Studies – *Poverty reduction in the Arab Sector*

Dr. Miari is currently a Lecturer (tenure track) at the Department of Labor Studies in Tel Aviv University. He earned his Ph.D. and M.A degrees in Economics from the Hebrew University of Jerusalem. He was a Research Affiliate at the Department of International Economics in the German Institute for Economic Research (DIW Berlin) until Jan 2012. In 2008-2009 he was a post-doctoral fellow in Economics on the Max Weber Program at the European University Institute in Florence-Italy. Dr. Miari's research focuses on the labor economics, economic causes and consequences of conflict, including on the economic costs of political instability and the relationship between economic shocks and conflict (focusing on the Israeli-Palestinian conflict), discrimination against ethnic minorities, and applied econometrics. He has published a number of papers in leading journals in these areas such as in the Journal of Population Economics, Journal of Public Economics, Journal of Conflict Resolution, and Journal of Economic Behavior & Organization. Recently, Dr. Miari co-lead a relatively large research project with the Overseas Development Institute (funded by DfID) on the effect of economic shocks on conflict. The results of his researches will serve to evaluate international policies designed for a peaceful resolution of the conflict both in the context of the Israeli-Palestinian conflict but also in the larger context of conflict resolution.



Dr. Nimrod Rosler, Department of Public Policy – *Diaspora and Conflict Resolution – Research Project Proposal*

Dr. Nimrod Rosler is a lecturer (tenure-track) at the Program in Conflict Resolution and Mediation, Department of Public Policy, Tel Aviv University. His research interests include political and psychological dynamics of intractable conflicts and their resolution, leadership in conflict and peacemaking, and conflict-related Diaspora communities. The latter is the subject of his present research program that has been awarded the support of BMI. The research is designed to examine the effect of socio-psychological constructs, such as collective identity and group-based emotions on the attitudes of conflict-related Diaspora towards conflict resolution in their homeland. The findings of the research will enable developing potential interventions to promote attitudes and mobilization efforts supporting peacemaking.



➤ BMI Activities

Inauguration of the Boris Mints Institute – May 19th, 2016

A part of the annual conference of Tel Aviv Board of Governors

The Inauguration of BMI included a chain of events that took place as a part of the annual conference of TAU's Board of Governors. Prof. Yoseph Klafter, TAU President and Prof. Yaron Oz, TAU Rector, lifted the veil off the BMI office. Discussions were held on all BMI activity fields: Conflict Resolution, the Global Energy Challenge and the Global Refugee Challenge, involving BMI board members and other prominent speakers. Some of the BMI grant receivers presented their work. At the end of this festive day, Dr. Mints was awarded an Honorary Fellow of Tel Aviv University.





Paris, Tel Aviv and Climate Change – Public Workshop, December 24th, 2015

In Cooperation with the Manna Center Program for Food Safety and Security

After the international conference regarding the climate change that was held in Paris on December 2015, BMI arranged a public workshop in order to discuss the climate change in general and explore the ways of meeting the international as well as the national goals set in Paris. Among the speakers in the workshop were Prof. Miranda Schreurs, Director of the Environmental Policy Research Centre, Frei University, Berlin; Ms. Yael Faran, a Member of the Israeli Parliament and alumni of the Department of Public Policy; Prof. Alon Tal, a leading expert in sustainability from the Department of Geography, Ben-Gurion University and Dr. Ram Fishman, Department of Public Policy, Tel Aviv University.



Third Annual Workshop: Israel, Sustainable Agriculture and the Developing World – JULY 13TH, 2016

In Cooperation with the Manna Center Program for Food Safety and Security

This workshop has brought together academic researchers, Private companies, government representatives and NGOs for an applies discussion on ways to fulfill the potential of Israeli technology and knowledge in order to contribute to global food security and sustainable agriculture, with an emphasis on smallholder farmers in developing countries.





The Gaidar Forum Conference in Moscow, Russia, on January 15, 2016, Russia and the World – Looking for the Future:

At the invitation of Dr. Boris Mints, Profs. Sened and Vered Blass represented BMI at this very important annual conference. Profs. Sened and Blass participated in a panel on power generation challenges for the 21st century – the green revolution, risks and opportunities for resource-rich countries. Professor Vered Blass, an expert on industrial ecology and corporate environmental management from TAU Business school, has been very involved in the activities of the center in all that pertains to sustainable energy policy and complex system analyses of policies in this field throughout Europe

Professor Sened gave a special interview to *Russia Direct* where he reviews the involvement of the two super powers, Russia and the U.S. in the Middle East. The interview can be seen here:

<http://www.russia-direct.org/qa/why-israel-thinks-russia-stabilizing-force-middle-east>





Following the Initiative of BMI, Israel is joining the international research organization IIASA:

Following the visit of IIASA delegation to Israel on April 2016, hosted by Tel Aviv University and BMI, TAU delegation visited IIASA headquarters in Vienna on July 13-14th, 2016 to promote Israel's joining to the international research organization IIASA, whose main research interest is energy system analysis. IIASA Director General and CEO Professor Dr. Pavel Kabat, Program Directors, and other IIASA senior officials met with our delegation to discuss enhancing research collaborations and Israel becoming a member of IIASA.



Pictured above the TAU Delegation to Vienna with Professor Rozenwaks of BMI Academic Board, leading the delegation second from left, standing behind him to his right is BMI supported, Ph.D. student, Karen Umansky and at the center of the picture BMI scholar, Dr. Vered Blass. Standing first from the right is the current head of IIASA

In addition, Prof. Itai Sened, head of BMI, attended two important events to mark and establish BMI as a significant player both in the Israeli and the International arena:



The Future City Conference in Almati, Kazakhstan, on July 7th, 2016 at the invitation of Almati Municipality and Almati Management University. Prof. Sened gave a talk on Human Capital as the main asset for the Creative Cities of the Future. The event was followed by a series of discussions and specific plans for enhancing the Israel Kazakhstan collaboration mainly in knowledge exchange in different fields of Economic Development.



The Renewable Energy Seminar in the Israeli Parliament on July 19th 2016. Prof. Sened's followed the opening address by Dr. Yuval Shteinitz, Israel's Energy Minister. The seminar was attended by Parliament Members, academic experts, decision makers of all levels of government and our students. Shortly after the day long Seminar, Dr. Shteinitz announced the phasing out of all Coal based Electricity generation in Israel to be completed in a six year process.



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