

Message from Eddie Pal, National President

All around me I feel a sense of excitement, of energy in the air. No, it's not the knowledge that autumn and the holidays are not far off. It's the feeling I have whenever I attend a CTS or Technion meeting or event. That energy is also present in my many phone calls and emails.

I felt it this summer when I attended the Board of Governors' meetings in Haifa in celebration of the Cornerstone Centennial, meeting Nobel Laureate Prof. Dan Shechtman, listening to enthusiastic presentation of the young researchers looking for answers to the questions of tomorrow, applauding the conferral of an honorary doctorate to CTS's own Gary Goldberg and of course, hearing the acknowledgement of a \$15 million gift from a Canadian anonymous donor.

I feel it whenever I meet with or speak to a member of CTS's Generation NEXT whether in Toronto or in Montreal, it can be about the planning of the 2nd Generation NEXT mission to Israel and the Technion, hearing the impressions of those who attended the Technion Board of Governors meeting or receiving updates on the upcoming inaugural Toronto event at the Hockey Hall of Fame.

That energy is also now present in Calgary where, thanks to Technion alumnus and Chemical Engineer, Ronnie Kaplan, we have opened a satellite office. Ronnie has volunteered to dedicate his time to the CTS and to focus on recruiting new members and donors from Alberta. The focus of fundraising for CTS Calgary will be in Oil and Gas Research, Medical Research and Nano-Technology and Nano-Technology will be the topic of the next event there on November 13th, when the guest speaker will be Prof. Yehousha (Ishi) Talmon, Director of Technion's Russell Berrie Institute for Nano-Technology.

Lastly, I feel it whenever I get the chance to speak to any of you about this great institution that we all are so proud of.

I want to wish you and your family a Shanah Tova and extend an invitation to you to join me on the CTS 70th Anniversary Mission to Israel and the Technion next June to share in the excitement and energy that is Technion.



Message from Doreen Green, National Chair

Technion celebrates its Cornerstone Centennial - 100 years since the first stone representing a vision became the reality of Israel's first university. A university that the highly respected Shanghai rankings of the world's 500 leading universities has placed 78th in the overall rankings, and in outstanding positions in areas such as computer science, natural sciences and chemistry.

The Canadian Technion Society celebrates 70 years since its founding - when a group of devotees, most of whom were engineers or architects, started modestly by mailing books to Palestine's first university, Technion.

I look back to over 25 years ago when Mike Rand z"l invited me to a meeting to find out more about Technion - that one meeting convinced me that this was an organization that I wanted to work with.

But what do these numbers really represent?

For Technion, they represent a century of vision, integrity and perseverance that has served Israel and the world. Today, Technion is a city of advanced research and learning. As Israel's largest and leading scientific-technological university and one of the leading centers of research in the world, it is a powerhouse of opportunities for shaping a future.

For the CTS, they represent the impressive Canadian footprint seen on the camps of the Technion.

For me, these past 25 years represent a deep pride in knowing that my involvement in the CTS and on the Board of Governors of the Technion has played a tiny part in the success of both. I also gained the friendship of people from across Canada and around the world who feel that same pride and connection to Technion and the State of Israel.

What will the future bring? That is up to us. Not only must we all continue to support Technion so it can continue to meet the challenges of future generations, but we must also impart our passion and loyalty to this great institution onto our children and grandchildren, our Generation NEXT.

Shana Tova to you and your family.

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Up, up and away - Farewell to Dr. Chernov

After spending the last two years in Toronto, the Canadian Technion Society bids Tzeitchem L'Shalom (Go in Peace) to Dr. Victor Chernov.

Dr. Chernov, who received his B.Sc. (2002), M.Sc. (2005) and Ph.D. (2010) from the Technion Faculty of Aerospace Engineering, was the the recipient of the Ilan Ramon doctoral scholarship by the Israeli Ministry of Science in 2007.

In 2010 he was awarded the Lyon Sachs Post-Doctoral Fellowship in the Faculty of Mechanical Engineering at the University of

Toronto. His research there was focused on Combustion, Rheology and the Two-phase flow.

During his stay in Canada, Dr. Chernov was extremely generous with his time in volunteering to speak to various groups across Canada about Technion and his research. His topic was aptly titled, "It doesn't take a Rocket Scientist...well actually it does."

We wish you all the best on your return to Israel and your new position at the Technion.

nano is HUGE

The Canadian Technion Society once again is proud to be heading out across Canada to showcase one of the best and brightest of Technion's prestigious Professors.

On Sunday, November 11, 2012, Professor Yeshayahu (Ishi) Talmon, Director of Technion's Russell Berrie Nano-Technology Institute, will be the guest speaker at the 2012 CTS Annual General Meeting.

Prof. Talmon will introduce how Nano Technology affects almost every facet of our daily lives. He will also be travelling to Edmonton, Calgary and Montreal during the week of November 12-15, 2012.

Prof. Talmon received his B.Sc (1969) and M.Sc (1975) from the Technion Faculty of Chemical Engineering. He received his Ph.D. (1979) from the

University of Minnesota Faculty of Chemical Engineering. Prof. Talmon has been a member of Technion's Faculty of Chemical Engineering since 1979, a Professor since 1991 and the Department Chairman from 2000-2005.

Nanotechnology (sometimes shortened to "nanotech") is the manipulation of matter on an atomic and molecular scale. Generally, nanotechnology works with materials, devices, and other structures with at least one dimension sized from 1 to 100 nanometers. Nanotechnology is very diverse, ranging from extensions of conventional device physics to completely new approaches based upon molecular self-assembly, from developing new materials with dimensions on the nanoscale to direct control of matter on the atomic scale.



Notice of Meeting

The Annual General Meeting and
Special Meeting
of the Canadian Technion Society
will be held

Sunday, November 11, 2012
at the Deloitte Conference Centre
in Toronto.

The meeting will commence at 10:00 a.m
followed by
Lunch and a Board of Directors Meeting.

Special Guest Speaker:
Prof. Yeshayahu (Ishi) Talmon



Generation NEXT Mission to Israel and Technion

A new generation has come of age, Generation NEXT, the young adults who have grown up with personal computers, cell phones and the internet. The Canadian Technion Society welcomes Generation NEXT, future Canadian leaders, to get connected to Technion and Israel and the heart of its High-Tech Sector.



Generation NEXT Israel Mission 2011



Generation NEXT

The Second Annual Generation NEXT mission to Israel will take place November 25 to December 2, 2012.

Eighteen Canadian Technion Society Generation NEXT members (aged 25-45) will participate in this seven day subsidized mission.

Participants will see what the Technion has contributed to Israel and the world in the fields of science, technology, medicine and engineering.

Participants will meet with some of the Technion's superstars like former Canadian, Dr. Karl Skorecki, Director of the Rappaport Institute and of Medical & Research Development, Rambam Health Campus, Prof. Hossam Haick, the professor behind the nano-artificial nose (Na-Nose) that can detect cancer and kidney disease. They will also visit some of Israel's exciting start-ups.

For further information: 1-800-935-8864 or info@cdntech.org

Toronto's Generation NEXT Launches Its Inaugural Event

Tuesday October 16, 2012, 6:30 pm
Hockey Hall of Fame, Toronto, Ontario

This inaugural event will bring together young professionals, technology enthusiasts, investors, idea-agents, and Technion supporters for cocktails and conversations.

The theme of this *party with a purpose* will be "innovation in sports", profiling Gold Sponsor, Applied Cognitive Engineering (ACE).

ACE was founded by Technion graduates and it develops software-based "Brain-Gyms" under the brand "Intelligym" (www.intelligym.com), a technology currently used globally by professional sports teams and defence forces, including the IDF.

In 2010, thanks in part to philanthropist Seymour Schulich, Generation NEXT was born with the vision of ensuring the continuity of the CTS and building the next chapter in its future.

Generation NEXT offers young Canadian leaders, 25-45, the chance to develop a connection and commitment to Technion, and through their innovative and creative thinking formulate new ways to support this world leader in bridging the links between the marvels of science and technology and the impending needs of humanity.

Tickets are still available for \$65

For more information please visit:
<http://ctsgennextlaunch.eventbrite.com/>



Together we have the power to make a difference and the world becomes a better place.

Just click onto the **DONATE NOW** icon on our newly re-designed website <http://www.cdntech.org/>





Professor Boaz Golany Visits Canada

Professor Boaz Golany, Vice President for External Relations and Resource Development visited Canada for a week in May.

In Toronto, Professor Golany met with donors, attended a cocktail evening where Professors Shulamit Levenberg and Marcel Machluff of the Technion spoke. He addressed a group of 70 participants at a Toronto -Technion Tech Transfer Fund luncheon. His topic was "T3 - Technion's Tech Transfer Program and more". Professor Golany also shared with the group the excitement of the Technion - Cornell partnership in Manhattan and the Cornerstone Centennial being celebrated by Technion.

Professor Golany visited Owen Sound, Ontario and then travelled to Montreal.

Boaz Golany is a Professor in the Faculty of Industrial Engineering and Management (IE&M) and the holder of the Samuel

Gorney Chair in Engineering at the Technion - Israel Institute of Technology.

He served as the Associate Dean of the IE&M faculty in 1994-1999 and as the Dean of the faculty in 2006-2011. He is also a senior research fellow at the Austin-based technology think tank IC2, whose goal is to facilitate global economic growth and job creation through innovation, creativity and capital.

He is considered one of the leading experts in several areas of Operations Management including efficiency and effectiveness analysis, supply chain management, project management and resource allocation in counter-terrorism and homeland security issues.

He has a B.Sc. (Cum laude) in IE&M from the Technion (1982), and a Ph.D. from the Business School of the University of Texas at Austin (1985).



CTS Celebrates David Azrieli's 90th Birthday



The Canadian Technion Society celebrated David Azrieli's 90th birthday at a luncheon held May 10 in his honour in Montreal.

After fleeing Poland and travelling through Russia and then Iraq, David arrived in Palestine at the end of 1942 where he worked to support his studies in architecture at the Technion-Israel Institute of Technology. Although his studies at Technion were interrupted in 1948 when he joined the IDF and fought in Israel's War of Independence, that attachment to Technion has remained strong, as has his close and impressive connection to the State of Israel.

Through the Azrieli Foundation, the Technion Faculty of Architecture and Town Planning has been the beneficiary of the Azrieli Chair in Architecture and Town Planning, the Azrieli Library, the Azrieli Computer Lab and the Azrieli Fund for Advanced Studies in Architecture and Urban Planning.

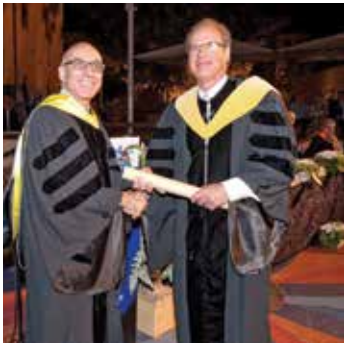
Mr. Azrieli, a past president of the Canadian Technion Society, was recognized by Gary

Goldberg, also a past president of CTS, for being a visionary and innovator both in his professional career and in his philanthropy. He has epitomized the "imagineer", someone who can imagine new forms and then engineer their realization. A plaque was presented to Mr. Azrieli to commemorate the occasion, recognizing his major transformative building projects in Israel, with words of encouragement to continue to be creative and productive.

Professor Boaz Golany, Technion's Vice President for External Relations and Resource Development brought greetings and a special mazel tov from the Technion administration and faculty. Prof. Golany noted how special it was that both David and Technion shared a milestone celebration this April 2012 - David's 90th birthday and Technion's Cornerstone Centennial. Accordingly, Prof. Golany presented David with a folio containing a special Israeli stamp and first day cover that was issued to honour the centennial of the cornerstone laying of Technion.



Highlights from the Technion 2012 Board of Governor's Meeting



Gary Goldberg Receives an Honorary Doctorate

The 2012 Technion honorary doctoral degree conferral ceremony was held on June 11th at MadaTech, the Israel National Museum of Science, which is housed in two historic landmark buildings in Haifa, designed at the turn-of-the-century, as the original home of the Technion - Israel Institute of Technology.

It was with great pride that the members of the Canadian delegation to the Board of Governors' Meeting were present when Gary Goldberg was called to receive his citation from Technion Senior Executive Vice President, Prof. Paul Feigin.

Gary spoke with deep respect for this institution to which he has devoted so much of his time, leadership skills and generosity. He expressed his gratitude to all those involved with the conferral of this significant and esteemed

recognition as well as for the extraordinary privilege of joining the other honorees on the podium, for what it represents; and for the many years of inspirational and proud association with this outstanding university; and especially its primary resource -- the people who have made it so successful. He stated that "The leadership team has achieved excellence at Technion by assessing and setting the priorities, distinguishing between the desired, the required, and the strategic. This visionary thinking has produced a globally recognized brand - Technion, whose reputation ranks it among the most dynamic and innovative universities in the world."

We extend a hearty Yasher Koach to Gary on this well-deserved honour.



A Jewel For My Wife

An exhibition of handcrafted jewelry created by Nobel Laureate Dan Shechtman was displayed on campus and opened during the 2012 Technion International Board of Governors meeting. Designed exclusively for his wife, Prof. Zipora Shechtman, the exhibition showcased 15 unique pieces ranging from earrings, bracelets and necklaces and an Aztec-inspired silver belt buckle which Distinguished Prof. Shechtman made for himself.



Laboratory Dedication

During the Technion's 100th Cornerstone Centennial celebration Board of Governor's Meeting a special ceremony took place that had a Canadian flavour.

A generous donation from the Clara and David Nightingale Foundation saw the construction and subsequent dedication of the Volatile Biomarkers of Lung Cancer Lab.

On hand representing the foundation were Torontonians, Naomi Fromstein and Efrim Boritz.

The Lab is headed by Professor Hossam Haick. At 37 years old, Prof. Haick is a researcher and senior lecturer in chemical engineering and nanotechnology. He already has several patents in his pocket. In 2005, he was listed as one of the thirty five "most-promising young scientists" in the Massachusetts Institute of Technology's "TR35" list. The Nazareth-born

Christian Arab, he published a paper in the prestigious Nature Nanotechnology on his development with Technion colleagues of a sensor composed of gold nano-particles that can differentiate between the breath of lung, breast and colon cancer patients and that of healthy people; this is now forming the basis of the lab's purpose to discover an inexpensive, portable noninvasive diagnostic tool the size of a cellular phone that would screen for a variety of malignant tumors. It has been known for some time that specific volatile organic compounds (VOCs) in exhaled breath are evidence of health problems.

The delightful ceremony was attended by Canadian participants and addresses were given by Technion President Prof. Peretz Lavie and the Director of the Russell Berrie Nano-Technology Institute, Prof. Yeshayahu (Ishi) Talmon.

Volatile Biomarkers of Lung Cancer Lab

Donated in loving memory of
Clara and David Nightingale
Toronto, Canada



Highlights from the Technion 2012 Board of Governor's Meeting



TOGETHER The Story of the Century

On the occasion of 100 years since the cornerstone laying of Israel's first university, this book is dedicated to the entire Technion Family, whose collective efforts have contributed, and continue to contribute so significantly to the advancement of Israel and the world.

Book Dedication

This book celebrating 100 years of Technion history and as a partial expression of awe and wonder of all that is Technion, was launched at the 2012 Board of Governors' Meeting, and it was made possible by a generous gift from the Canadian Technion Society.

What lies behind the success and triumphs found in this book? What is Technion's secret ingredient that puts the drive to excellence so soundly in the fast-lane of progress? The answer can be found in the words vision and responsibility - or to put it differently - the ability to formulate a vision and to proceed stubbornly to achieving it by responding to challenges and to change

With this book, we share this vision and tremendous responsibility. We share this beacon of light with you, affirming that wherever you are, Technion with its power to create the future, our future, is by your side.

A Tradition Continues



The Lady Davis Fellowship Trust was established 40 years ago to provide the opportunity for leading scientists and scholars, post-doctoral researchers and doctoral students from abroad, regardless of nationality, gender or field of scholarship to teach, study and participate in research in Israel at the Hebrew University in Jerusalem and at the Technion Institute of Technology in Haifa.

On a beautiful Sunday afternoon in June at the Technion Board of Governors meeting a tradition continued.

The Bloomfield Family and the Eldee Foundation have, for many years, hosted a luncheon in honour of the Lady Davis Fellows at Technion. This year, the luncheon also honoured Gary Goldberg on the conferral of an Honorary Doctorate.

It was more than a coincidence that Ying Zhao was among the guests and that she addressed the group. As the Bloomfield Family represents a long history of loyal support to the Technion and Gary Goldberg represents the strength of CTS's leadership, Ying Zhao, as a former Lady Davis Fellow and current member of the Canadian Technion Society's Generation NEXT represents the outstanding quality of Technion alumnae and the future leadership of the CTS.

In Ying's own words:

"As we drove through the campus, I had an awe feeling that I had never left here. Therefore, I invite you to imagine another

Lady Davis event at the Technion in 1996. Two other Lady Davis Fellows, also studying Electrical Engineering as I was at the time, and I, were honoured to be there. We were asked why we had chosen to study at the Technion. Despite our diverse background, one from Canada, one from Spain, and myself from China, we had three major reasons in common that brought us to the Technion. First of all, Technion is one of the best Engineering schools in the world. Second, in our respective chosen fields, we felt that Technion offered us the best quality graduate program. Last, but not least, we received Lady Davis Fellowships, when we were accepted to the graduate programs.

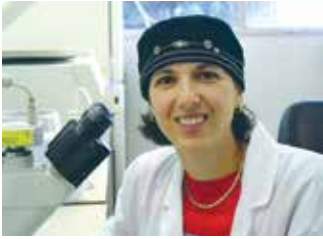
We were and still are very proud of being a Lady Davis fellow because it recognized and symbolized our academic achievement. At the same time, we felt lucky that we received Lady Davis Fellowship Trust's sponsorship, as this provided the financial support necessary to allow us to make the trip to and study at the Technion. Today, sixteen years later, of these three students that I mentioned, one of us has developed a career as a senior research scientist in Medical Imaging at Xoran Technologies, another one became a product development manager at Qualcomm, and I, myself, work as a Software Engineer at IBM research in Toronto. We are personal proof of what a Lady David Scholarship can influence. These are examples of the impact of the Lady Davis Scholarship Program."





The future of Israel is in high-technology and the future of high-technology in Israel is at Technion.

TECHNION TRIUMPHS



Engineered Pancreatic Tissues Could Lead to Better Transplants for Diabetics

Technion researchers have built pancreatic tissue with insulin-secreting cells, surrounded by a three-dimensional network of blood vessels. The engineered

tissue could pave the way for improved tissue transplants to treat diabetes.

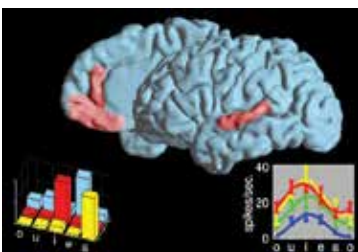
The tissue created by Professor Shulamit Levenberg of the Technion-Israel Institute of Technology and her colleagues has some significant advantages over traditional transplant material that has been harvested from healthy pancreatic tissue.

The insulin-producing cells survive longer in the engineered tissue, and produce more insulin and other essential hormones, Levenberg and colleagues said. When they transplanted the tissue into diabetic mice, the cells began functioning well enough to lower blood sugar levels in the mice.

Transplantation of islets, the pancreatic tissue that contains hormone-producing cells, is one therapy considered for people with type 1 diabetes, who produce little or no insulin because their islets are destroyed by their own immune systems. But as with many tissue and organ transplants, donors are scarce, and there is a strong possibility that the transplantation will fail.

The 3-D system developed by the Technion researchers tackled this challenge by bringing together several different cell types to form a new transplantable tissue. Using a porous plastic material as the scaffold for the new tissue, the scientists seeded the scaffold with mouse islets, tiny blood vessel cells taken from human umbilical veins, and human foreskin cells that encouraged the blood vessels to develop a tube-like structure.

The technology "is still far from tests in humans," Levenberg said, but she noted that she and her colleagues are beginning to test the 3-D tissue scaffolds using human instead of mouse islets.



Decoding Human Speech

Researchers from Technion and from UCLA have identified a structured neuronal encoding and decoding of human speech features. They were able to directly decode vowels from the neural activity which

leads to their articulation - a finding which could allow individuals who are completely paralyzed or "locked in" to "speak" to the people around them through a direct brain-computer interface.

"There are diseases in which the patient's entire body is paralyzed, he is effectively 'locked in' (locked-in syndrome) and is unable to communicate with the environment, but his mind still functions," explains Prof. Shy Shoham, head of the Neural Interface Engineering Laboratory. "Our long-term goal is to restore these patients' ability to speak using systems that will include implanting electrodes in their brains, decoding the neural activity that encodes speech, and

'voicing' artificial speech sounds. For this purpose, we wanted to first understand how the information about the articulated syllable is encoded in the electrical activity of an individual brain neuron and of a neuron population. In our experiments we identified cell populations that distinctly participate in the representation. For example, cells we registered in an area in the medial frontal lobe that includes the anterior cingulate cortex, surprised us in the manner in which they 'sharply' represented certain vowels but not others, even though the area is not necessarily known as having a major role in the speech generation process."



Is There Life on Mars?

Images sent back to Earth from the Curiosity rover utilize a version of the LOCO system for video compression developed by **Technion** alumni, Drs

Marcelo Weinberger and Gadiel Seroussi. Weinberger and Seroussi's doctoral advisors were Profs. Abraham Lempel and Jacob Ziv, developers of the Lempel-Ziv coding algorithm - a world standard for compressed information transmission.

NASA's groundbreaking mission seeks to determine whether Mars is or has ever been capable of supporting life and to assess the planet's habitability for future human missions.



Chronicling Technion's Transformative Influence on Israel and the World

As Technion continues to make headlines, many have asked how a small Israeli university became the powerhouse that has had a \$60 billion impact on the Israeli economy, transforming it from one focused on agriculture to one based on high-tech - in other words, from Jaffa to Java.

The book *Technion Nation*, by Profs. Amnon Frenkel and Shlomo Maital, senior research fellows at Technion's Samuel Neaman Institute for Advanced Studies in Science and Technology, tells how Technion scientists have given the world discoveries leading to treatments for cancer and Alzheimer's and countless innovations that enrich the lives of people everywhere - winning Nobel Prizes along the way.

In the book's foreword, Israel's President Shimon Peres says, "It was lucky the Technion was founded prior to the establishment of the State of Israel, helping us prepare for the future."

Also discussed in the book are the many start-up companies that emanate from Technion researchers and alumni, and facts that include:

- More than two-thirds of the Israeli companies traded on the tech-heavy NASDAQ stock exchange have Technion alumni as founders or senior managers.
- There are more firms from Israel listed on the NASDAQ than from France, Germany and the UK combined.
- 17 percent of Technion graduates work in high-tech start-ups - three times the general rate.