



NATIONAL ACADEMY OF SCIENCES
THE NATIONAL ACADEMIES



EMBASSY OF ISRAEL
WASHINGTON, D.C.



From Science to Industry: **Successes and Challenges of the** **U.S. - Israel Binational Model**



June 17, 2008

From Science to Industry: Successes and Challenges of the U.S. - Israel Binational Model

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Washington, D.C.

Dear seminar participants,

It is with great pleasure that we welcome you to this seminar, dedicated to U.S-Israel science and technology cooperation.

The choice of place and time are symbolic of the special relationship between the U.S. and Israel. The seminar is being held here in the heart of the U.S. capital, while Israel celebrates 60 years of independence.

The three binational relationships represented in this event - BARD, BIRD and BSF - are unique and successful manifestations of U.S.-Israel cooperation and offer a model of broader multi-national cooperation as well.

A group of senior figures from government, academy and industry have assembled here to address the theme of the transition from science to industry. The economies of both countries are increasingly knowledge and science based; sustainable economic growth and social progress in both countries depend on both scientific development born of innovative research, and the ability to transform knowledge into useful products. It is our view - based on years of experience - **that this transition from science to industry has been greatly enhanced by the U.S.-Israel binational foundations' cooperation model.**

In an increasingly globalized world, the importance of international cooperation in science and technology is growing. This phenomenon is evident in almost every area, and in some fields, such as energy, water and homeland security - it is absolutely critical.

The three binational foundations represented here today have successfully facilitated U.S.-Israeli science and technology cooperation for more than 30 years. Yet the challenges of the coming years and decades are too great, and too important, to allow us to

rest on our laurels. It is these challenges that we seek to address in today's seminar.

We are grateful to the National Academy of Sciences for providing its marvelous venue for this event.

We hope you will enjoy today's program, and that this seminar will contribute to the further reinforcement of the already strong U.S.-Israeli relationship.

BARD¹

Edo Chalutz, Ph.D.

Executive Director

BIRD²

Eitan Yudilevich, Ph.D.

Executive Director

BSF³

Yair Rotstein, Ph.D.

Executive Director

¹BARD Fund: The United States-Israel Binational Agricultural Research & Development Fund

²BIRD Foundation: The Israel-United States Binational Industrial Research & Development Foundation

³BSF: The United States-Israel Binational Science Foundation

Agenda

8:00 AM - 9:00 AM	Registration and Breakfast
9:00 AM - 9:05 AM	Welcome by The National Academies <i>Dr. E. William Colglazier</i> , Executive Officer
9:05 AM - 9:25 AM	Greetings: <i>The Hon. John D. Negroponte</i> , U.S. Deputy Secretary of State <i>The Hon. Sallai Meridor</i> , Israeli Ambassador to the U.S.
9:25 AM - 9:55 AM	"From Basic Research to Clinical Therapy: The Promise of the Ribonuclease P Enzyme" <i>Prof. Sidney Altman</i> , Yale University, Nobel Laureate in Chemistry, 1989
9:55 AM - 10:25 AM	"Combating Oil Dependency and Climate Change Through Technology, Leadership and Action" <i>Dr. Sass Somekh</i> , Founder, Musea Ventures
10:25 AM - 10:35 AM	"International Science and Technology Cooperation" <i>Dr. Eli Oppen</i> , Chief Scientist, Israel Ministry of Industry, Trade and Labor
10:35 AM - 10:55 AM	Coffee Break

10:55 AM - 11:40 AM	Panel: "The U.S. - Israel Binational Foundations: A Proven Model with a View to the Future" Moderator: Mr. Ron Dermer, Minister for Economic Affairs, Embassy of Israel Dr. Edo Chalutz, Executive Director, BARD Dr. Yair Rotstein, Executive Director, BSF Dr. Eitan Yudilevich, Executive Director, BIRD
11:40 AM - 12:10 PM	"Discovery with Delivery - Effective Partnerships for Developing and Commercializing Food Systems Technologies" Prof. Victor Lechtenberg, Vice Provost for Engagement, Purdue University
12:10 PM - 12:40 PM	"The Roots of the Israeli Venture Capital Industry" Dr. Ed Mlavsky, Chairman & Founding Partner, Gemini Israel Funds
12:40 PM - 1:00 PM	Audience Q & A
1:00 PM - 2:00 PM	Adjournment and Lunch

Speakers

Dr. E. William Colglazier

Executive Officer

National Academy of Sciences



Dr. E. William Colglazier is Executive Officer of the National Academy of Sciences and Chief Operating Officer of the National Research Council. From 1991 to 1994, he was Executive Director of the Office of International Affairs of the NRC. From 1983 to 1991, he was Professor of Physics and Director of the Energy, Environment, and Resources Center at the University of Tennessee. He received his Ph.D. in theoretical physics from the California Institute of Technology in 1971, and worked at the Stanford Linear Accelerator Center, the Institute for Advanced Study in Princeton, and the Kennedy School of Government at Harvard prior to 1983. While at Harvard, he also served as Associate Director of the Program in Science, Technology, and Humanism of the Aspen Institute. In 1976-77, he was an AAAS Congressional Science Fellow working for Congressman George Brown. He is past chair of the Forum on Physics and Society of the American Physical Society and a Fellow of the American Association for the Advancement of Science and the American Physical Society.

The Hon. John D. Negroponte

Deputy Secretary of State

U.S. Department of State

Term of Appointment: 02/13/2007 to present.



Ambassador John D. Negroponte is the Deputy Secretary of State, the Department of State's second ranking official. Appointed by President Bush, he was confirmed by the U.S. Senate on February 12, 2007, and was sworn into office by Vice President Cheney on February 13. As Deputy Secretary of State, he assists Secretary Rice in the conduct of U.S. foreign policy and functions as the chief operating officer of the Department. He coordinates and supervises U.S. Government activities overseas, represents the Department's position before Congress, and manages key foreign policy issues on the Secretary's behalf.

Prior to his current assignment, Ambassador Negroponte served as the first Director of National Intelligence (DNI), for which he was sworn in on April 21, 2005. Previously, he had been serving as United States Ambassador to Iraq, since June 28, 2004. From September 18, 2001, until his appointment to Iraq, Ambassador Negroponte served as the United States Permanent Representative to the United Nations.

From 1997 to 2001, Ambassador Negroponte was employed in the private sector as Executive Vice President for Global Markets of The McGraw-Hill Companies in New York.

From 1960 to 1997, Ambassador Negroponte was a member of the Career Foreign Service. He served at eight different Foreign Service

posts in Asia, Europe and Latin America; and he also held important positions at the State Department and the White House.

Among his assignments, Ambassador Negroponte was Ambassador to Honduras (1981-1985); Assistant Secretary of State for Oceans and International Environmental and Scientific Affairs (1985-1987); Deputy Assistant to the President for National Security Affairs (1987-1989); Ambassador to Mexico (1989-1993); and Ambassador to the Philippines (1993-1996).

Ambassador Negroponte is a Member of the Council on Foreign Relations and the American Academy of Diplomacy. He is a former Chairman of the French-American Foundation.

Ambassador Negroponte was born July 21, 1939, in London, England. He received his Bachelor of Arts from Yale University in 1960. He and his wife, Diana, have five children.

The Hon. Sallai Meridor

Israeli Ambassador to the U.S.

Embassy of Israel



Sallai Meridor served as the Chairman of the Jewish Agency for Israel and the World Zionist Organization from 1999-2005. Prior to this, Mr. Meridor served as the Treasurer of the Jewish Agency and WZO and as the Head of the Settlement Division of the WZO.

During the years of his chairmanship, the Jewish Agency underwent a major transformation. The strategy and activities of the Agency were focused on dealing with the Jewish future - the young generation of Jews. Major initiatives included the Masa national effort to bring 20,000 young adults per annum from the Diaspora for a year-long formative experience in Israel, focusing the activities of the Agency in Israel on young Israelis and young Olim, special Aliyah efforts from FSU, Ethiopia, Argentina, and France, and strategic preparations for dealing with the future challenge of Aliyah choice. In response to the war of terror against Israel, a global Jewish mobilization effort and a major emergency campaign was launched. Internally, the budget of the Jewish agency was balanced, agreements to eliminate \$700M in debt (which put the agency at risk) were reached, and the Agency took a historic step by restructuring its governing bodies to include significant nonpolitical representation from Israeli society. Finally, with a view towards the Jewish future, the first ever Jewish People Policy Planning Institute was established.

Prior to his work with the Jewish agency, Mr. Meridor served as an advisor to the Minister of Defense and the Minister of Foreign Affairs of the State of Israel. In his governmental service, he was involved

in the designing of Israel's foreign and defense policies, played a role in the peace process leading to the Madrid Peace Conference, participated in the negotiations that followed as the representative of the Ministry of Defense, and led Israel's Inter-Agency Steering Committee on Arms Control.

Born and educated in Jerusalem, Mr. Meridor earned his B.A. degree at the Hebrew University of Jerusalem. He served as an Intelligence Officer in the IDF. He lives in Kfar Adumim with his wife No'a. They are the proud parents of three daughters.

Prof. Sidney Altman

Nobel Laureate in Chemistry, 1989

Yale University



Prof. Sidney Altman is Sterling Professor of Biology and Professor of Chemistry at Yale University. He won the 1989 Nobel Prize for Chemistry for his discoveries concerning RNA, or ribonucleic acid.

In the early 1980s, Prof. Altman found that ribonucleic acid (RNA) molecules can act as enzymes, a discovery that broadened our understanding of the origins of life. Before this discovery, it was believed that all enzymes were made of protein and that primitive cells, therefore, used proteins to catalyze biochemical processes. Now, it appears that RNA may have acted as a catalyst.

This discovery, which was described by the Nobel Academy as one of "the two most important and outstanding discoveries in the biological sciences in the past 40 years," the other being Crick and Watson's discovery of DNA's double helix structure. This new knowledge has opened up new fields of scientific research and biotechnology and caused scientists to rethink old theories of how cells function.

High hopes exist for the practical applications of this discovery, which was made concurrently by Altman and by Prof. Thomas R. Cech, working independently, and who shared the Nobel Prize in Chemistry for 1989. If RNA enzymes are able to cut additional sequences of tRNA from a strand of precursor tRNA, doctors could possibly use RNA enzymes to cut infectious RNA from the genetic system of a person with an infectious viral disease. Research into this

field is ongoing and, if fruitful, could contain the key to curing viral infections such as cancer and AIDS.

Prof. Altman was born in Montreal, Canada in 1939. He attended the Massachusetts Institute of Technology (B.S., 1960, in physics) and the University of Colorado (Ph.D., 1967, in biophysics). He was a molecular biology fellow at Harvard University (1967–69) and at the Laboratory of Molecular Biology of the Medical Research Council in Cambridge, England (1969–70) before joining the biology faculty at Yale University in 1971. He became a full professor at Yale in 1980, was the department chairman from 1983 to 1985, and served as dean of the undergraduate Yale College from 1985 to 1989, where he established a greater role for scientific education in all of Yale's curriculums.

Prof. Altman has collaborated on three multiyear projects supported by the BSF, most recently with Dr. Nayef Jarrous of the Hebrew University of Jerusalem, who also did his postdoctoral research under Prof. Altman.

Dr. Sass Somekh

Founder

Musea Ventures



Sass Somekh is responsible for leading the development and driving the business growth of several key products in the Semiconductor-equipment industry.

He is the retired President, and current Chair of the Technical Advisory Board of Novellus Systems. Prior to joining Novellus, he was an Executive VP and a board member at Applied Materials. During his 24-year tenure at Applied Materials he played a critical role in transforming it from a \$50-million company to the \$10-billion semiconductor-equipment industry leader it is today.

- In 1993 Sass was recognized as a co-inventor of the Precision 5000 when it became the first semiconductor-manufacturing system to be placed in the permanent collection of the Smithsonian Institution. It is on display in the **Information Age** exhibit at the National Museum of American History, Washington, D.C.
- In 1994 Sass received the Semiconductor Equipment and Materials Institute's SEMI Lifetime Achievement Award in recognition of his many contributions to the industry.
- In 2006 Sass was inducted into the Silicon Valley Engineering Hall of Fame for his professional achievements and contribution to the Silicon Valley community.

Sass received his Ph.D. in electrical engineering from Caltech. He holds more than 50 U.S. patents.

Sass Somekh is on the boards of Synopsys, Nanosys, SoloPower, HelioFocus, TJet and Sol-Gel Technologies.

Dr. Eli Oppen

Chief Scientist

*Ministry of Industry, Trade and Labor,
Israel*



Dr. Oppen is the Chief Scientist in the Ministry of Industry, Trade and Labor of Israel.

Before his appointment, Dr. Oppen was a partner at Giza Venture Capital, after a 27 year career at Rafael, Israel's leading armaments corporation and authority on research and development. In the last decade in Rafael he held the position of Chief of Staff, VP of R&D, VP of Advanced Topics and General Manager of the Electronic Systems Division.

Dr. Oppen served as a member of numerous professional committees, published papers and was a lecturer in the areas of computers, R&D and management at academic institutions and professional seminars. He has served as a director and chairman of high-tech companies and as a member of the boards of public organizations.

Dr. Oppen held a research degree equivalent to a full Professorship and holds B.S. and M.Sc. degrees in Electrical Engineering, from the Technion - Israel Institute of Technology in Haifa, as well as a Ph.D. in Computer Engineering from the University of Texas, Austin.

Mr. Ron Dermer

*Minister for Economic Affairs
Embassy of Israel*



Ron Dermer, 35, was born and raised in Miami Beach, Florida. He earned a degree in Finance and Management from the Wharton School of Business at the University of Pennsylvania and a degree in Philosophy, Politics and Economics (PPE) from Oxford University. For nearly ten years, he worked in Israel as a consultant, advising some of the country's leading politicians, including Benjamin Netanyahu and Natan Sharansky. For nearly three years, he was a columnist for the Jerusalem Post.

In 2004, Ron co-authored, with Natan Sharansky, the best-selling book, *The Case For Democracy: The Power of Freedom to Overcome Tyranny and Terror*, which has been translated into ten languages. In 2005, Ron was appointed to serve as Israel's Minister of Economic Affairs in the United States. He is married to Rhoda and has three children, Mayor, Zev and Ezra. His brother David Dermer is in his third-term as Mayor of Miami Beach and his father Jay Dermer was a two-term Mayor of Miami Beach as well.

Dr. Edo Chalutz

Executive Director

BARD Fund



Dr. Chalutz holds a Ph.D. in Plant Pathology from the University of California, Davis (1968). Upon his return to Israel (1969), he joined the Agricultural Research Organization (ARO), Bet Dagan. During the course of his scientific career, Dr. Chalutz also served as Head of the Department of Postharvest Science, Director of the Institute for Technology and Storage of Agricultural Products, and as Scientific and Academic Director of the ARO.

Dr. Chalutz has authored more than 200 scientific publications, patents, invited reviews, book chapters, etc. His scientific experience in collaborative research includes three Sabbatical years in the United States at the University of Maryland, College Park, MD, USDA-ARS at Beltsville, MD and Kearneysville, WV, and several BARD competitive research grants. The focus of his research was the development of biological substitutes for synthetic chemical pesticides in food products (citrus and stone fruits).

Dr. Yair Rotstein

Executive Director

BSF



Dr. Yair Rotstein is the third Executive Director of the BSF, and assumed office in Nov. 2004.

Under his leadership the Foundation has modernized its activities, completing an internet-based application submission and processing system, and has moved to a modern facility. Recently he initiated a sustained undertaking to enhance public awareness of the BSF and to increase its resources through fundraising.

Dr. Rotstein is an earth scientist, who came to the BSF experienced in science management, having served previously as director of the Geophysical Institute of Israel for 12 years. While at the Institute, he developed its applied and basic research activity in diverse disciplines such as earthquake research and geophysical methods in oil exploration. He also initiated the Institute's international activity in commercial oil exploration. He made a special effort to increase the Institute's regional ties, and was himself part of two Middle East Regional Cooperation programs (AID) with Palestinians and Jordanians.

He received his BSc in geology from the Hebrew University in 1969, after serving in the IDF, where he retired as an airborne Lieutenant. He then completed a PhD at the University of California, Riverside, specializing in geophysical exploration for geothermal resources. After a short post-doc at the University of Texas in Dallas, and work in a geothermal exploration in the U.S., he assumed a position as a staff geophysicist at the Geophysical Institute of Israel.

Dr. Rotstein is the author of some 60 refereed articles, and a large number of reports. He spent a year each at the Geological Observatory of Columbia University, and Freiburg University, Germany. He also held, on two separate occasions, one-year appointments as a Research Professor in Strasbourg University, where he continues to have short positions annually, investigating the structure as well as the food and wine of the Rhine Valley.

Dr. Rotstein is married to Lea, and is the father of Guy (29), Anat (26) and Efrat (26), and the grandfather of Tamar (4) and Oren (1).

Dr. Eitan Yudilevich

Executive Director
BIRD Foundation



Dr. Eitan Yudilevich assumed the Executive Director position at the BIRD Foundation on January 1, 2006.

In his first two years of tenure, BIRD's Board of Governors approved 55 new full-scale, joint U.S.-Israeli company-to-company projects. In addition, new emphasis has been given to new areas, such as Renewable and Alternative Energy and Cleantech.

He joined BIRD with vast international experience after a varied career in Israel and the U.S., including management of Rafael's operations in the U.S. for four years. In his last position at Rafael, Dr. Yudilevich served as Vice President of Marketing and Business Development.

Previously, he was in charge of Rafael's missiles division, the company's largest division which also develops various technologies which have civilian applications, such as Given Imaging's unique capsule.

Dr. Yudilevich has been a member or chairman of numerous boards of international joint ventures. He was also chairman of the board of Opgal, an electro-optics company, and served as director of RDC, a business development company jointly owned by Elron and Rafael.

Dr. Yudilevich completed his doctoral studies in computers and systems engineering in the field of medical imaging at Rensselaer

Polytechnic Institute in Troy, New York. He earned his Master's Degree in mathematics at the Rensselaer Polytechnic Institute, and his Bachelor's and Master's Degrees in electrical engineering at Haifa's Technion.

His doctoral research resulted in several scientific papers being published by highly regarded journals. In addition, since the mid 90s he has been an active participant in IEEE Engineering Management conferences, where has presented papers on innovation management. His latest interest is in the application of Real Options for R&D project evaluation.

Dr. Yudilevich was born in Santiago, Chile. He is married to Bruria and they have three children: Gali (1976), Ori (1980), Dan (1986). Their home is located in Karmiel, a beautiful town in the north of Israel, in the lower Galilee.

Prof. Victor L. Lechtenberg

*Vice Provost for Engagement
Purdue University*



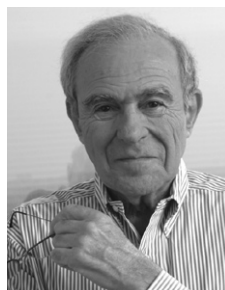
Victor (Vic) L. Lechtenberg is Vice Provost for Engagement at Purdue University. He served as interim provost at Purdue from August, 2007 to May, 2008. Lechtenberg joined the Purdue faculty in 1971 and became a professor of agronomy in 1979. He served as associate director of the Indiana Agriculture Experiment Station (now the Office of Agricultural Research Programs) from 1982-1989, coordinating relationships between agricultural researchers and funding sources as well as reviewing research proposals from academic departments. Lechtenberg served as the executive associate dean of agriculture from 1989 to 1993. In 1993, Lechtenberg was appointed interim dean of Agriculture and was appointed dean of agriculture, in 1994, he held that position until 2004. Lechtenberg has been leading Purdue's engagement programs as vice provost since 2004.

Lechtenberg has served on BARD's Board of Directors since 2001. Lechtenberg is a member of several academic, professional, and scholarly societies and has written nearly 150 technical papers, approximately 50 abstracts, and 6 chapters in books. He served as chair of the U.S. Department of Agriculture's national Agricultural Research, Extension, Education and Economics Advisory Board from 1996 through 2002. In that capacity, he provided written testimony on biosecurity for the U.S. Senate.

Lechtenberg is a native of Butte, Nebraska, where he grew up on a general livestock farm. He received his bachelor's degree from the University of Nebraska in 1967 and earned a doctorate in agronomy from Purdue in 1971.

Dr. A.I. Mlavsky

Chairman and Founding Partner Gemini Israel Funds



Ed is the Chairman and Founding Partner of Gemini Israel Funds. He is widely recognized as one of the founding fathers of Israeli high-tech and venture capital. In 1993, Ed was asked to manage the first venture capital fund to emerge from the Israeli government's Yozma program. Aimed at prompting venture investments in Israel, Yozma transformed the domestic landscape of venture capital investments. Over a period of three years, the group established ten drop-down funds, of which Gemini was the first. Prior to founding Gemini, Ed served as Executive Director of the Israel-U.S. Binational Industrial Research and Development Foundation (BIRD). During his tenure, he was responsible for investments of \$100 million in more than 300 joint projects between U.S. and Israeli high technology companies.

Prior to BIRD, Ed was Executive Vice President of Mobil Tyco Solar Energy Corporation, a joint venture created by Mobil Corporation and Tyco Laboratories Inc. to develop and commercialize a novel photovoltaic technology initiated under Ed's direction at Tyco, a company of which he was a co-founder in 1960. Tyco (now Tyco International, Inc., NYSE) had 2006 revenues of over \$4 billion. Until 1974, Dr. Mlavsky was a member of its Board of Directors and its Chief Technical Officer; in 1973, he became President and Chief Operating Officer.

Ed has a First Class Honors B.Sc. degree in Chemistry (1950) and a Ph.D. in Physical Chemistry (1953) from Queen Mary College,

University of London. His publications include 53 scientific and technical papers, and 24 patents (plus many foreign applications).

Immediately prior to coming to Israel, he was a member of the U.S.-Israel Advisory Council on Industrial R&D, and a member of the Board of Visitors to the School of Engineering at Duke University. In 1989, he was elected a member of the Cosmos Club in Washington, D.C. In 1994, he was awarded the degree of Doctor Scientiarum Technicarum Honoris Causa by the Technion - Israel Institute of Technology.

In April 2003, Ed received the Israel High-Tech Award from the Israel Venture Association in recognition of his unique contribution to the development of the Israel high-tech industry. Ed is the Chairman of the MIT Enterprise Forum of Israel.

Ed was recently recognized by the Israeli business press as one of the five most influential people in the Israeli hi-tech industry. He is a much sought after world-class speaker and lectures at hi-tech and private equity events.

The National Academy of Sciences (NAS)

The National Academies

The National Academy of Sciences (NAS) is an honorific society of distinguished scholars engaged in scientific and engineering research, dedicated to the furtherance of science and technology and to their use for the general welfare.

The NAS was signed into being by President Abraham Lincoln on March 3, 1863, at the height of the Civil War. As mandated in its Act of Incorporation, the NAS has, since 1863, served to "investigate, examine, experiment, and report upon any subject of science or art" whenever called upon to do so by any department of the government. Scientific issues would become even more contentious and complex in the years following the war. To keep pace with the growing roles that science and technology would play in public life, the institution that was founded in 1863 eventually expanded to include the National Research Council in 1916, the National Academy of Engineering in 1964, and the Institute of Medicine in 1970. Collectively, the four organizations are known as the National Academies.

Since 1863, the nation's leaders have often turned to the National Academies for advice on the scientific and technological issues that frequently pervade policy decisions. Most of the institution's science policy and technical work is conducted by its operating arm, the National Research Council, created expressly for this purpose. These non-profit organizations provide a public service by working outside the framework of government to ensure independent advice on matters of science, technology, and medicine. They enlist committees of the nation's top scientists, engineers, and other experts, all of

whom volunteer their time to study specific concerns. The results of their deliberations have inspired some of America's most significant and lasting efforts to improve the health, education, and welfare of the population. The Academy's service to government has become so essential that Congress and the White House have issued legislation and executive orders over the years that reaffirm its unique role.

The Academy membership is composed of 2,115 members and 396 foreign associates, of whom 201 have won Nobel Prizes. Members and foreign associates of the Academy are elected in recognition of their distinguished and continuing achievements in original research; election to the Academy is considered one of the highest honors that can be accorded a scientist or engineer. The Academy is governed by a Council consisting of twelve members (councilors) and five officers, elected from among the Academy membership. Dr. Ralph J. Cicerone is the president of the National Academy of Sciences.

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Embassy of Israel - Washington D.C.



The Israel Ministry of Foreign Affairs formulates, implements, and presents the foreign policy of the Government of Israel. The headquarters of the Ministry are in Israel's capital, Jerusalem. Israeli missions around the world work with the Ministry of Foreign Affairs in presenting the policies of the Government of Israel to the world, strengthening ties with different countries and international organizations. Israel currently maintains diplomatic relations with 162 countries. The Embassy of Israel in Washington, D.C. is Israel's largest embassy in the world.

Inside The Embassy

- **Commercial Mission:** Aims to enhance the bilateral commercial relations and to promote and facilitate trade and investment between Israel and the United States.
- **Office of Agriculture and Science:** Promotes the developments of agricultural trade and trade related issues between the countries and develops the relations and cooperation with its counterparts in the Federal Government, State institutions, research centers and private organizations in the U.S., Canada and Mexico.
- **Public Affairs:** Provides information to the American public on a variety of issues including policy, society, and the economy; Coordinates cultural events and academic affairs.
- **Political Affairs:** Develops and maintains the bilateral relationship between the U.S. and Israel.
- **Congressional Department:** Works with the U.S. Congress to strengthen the U.S.-Israel relationship.

- **Press Department:** Provides the media with information on Israel and Israeli current events.
- **Military Department:** Develops and maintains the relationship between the Israel Defense Forces (IDF) and the U.S. Department of Defense and military.
- **Police Department:** Facilitates cooperation and exchange between Israeli and American police and security forces.
- **Economic Department:** Strengthens bilateral economic ties between Israel and the United States.
- **Consular Department:** Assists with travel inquiries and processes documents related to citizenship and nationality, including visas and passports.

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<http://www.israelemb.org>

BARD Fund



Background and Accomplishments

The United States-Israel Binational Agricultural Research and Development Fund (BARD) is a competitive funding program for mission-oriented research of agricultural problems, jointly conducted by American and Israeli scientists. BARD also funds international workshops, postdoctoral fellowships and exchange of agricultural experts. BARD projects focus on increased agricultural productivity, particularly in arid and semi-arid climates, with special emphasis on plant and animal health, food quality, safety and security, agriculturally-related environmental issues and state of the art technology, including modern molecular biology and recombinant DNA technology.

BARD accomplishments: A commissioned economic analysis¹ of 10 projects anticipates aggregate benefits of \$1.2B by 2010. Total expenditures for BARD funding by that year will be \$260M. Economic benefits to the US of only three evaluated projects exceeded \$200M in 1998 alone. These projects significantly contributed to the development of the aquaculture industry in the southern US (estimated to exceed \$150M by 2010), to fish genetics for farmed fish (\$96M) and to improve feed efficiency in the poultry industry (\$187M).

The external review of BARD's operations at 20 years² (1999) reflected agricultural research with high caliber scientific and technical outcomes. Contributions address water pricing, irrigation,

¹ Norton, G.W., Z. Tropp, J. Mullen, M. Keynan and A. Cohen, BARD 20-Year Review Economic Evaluation of Selected BARD Projects, January, 2000 (72 pages). (Available from the BARD office).

² Stone, B., I. Barash, R.J. Cook, P.R. Day and S. Fuchs, 20 Year External Review of The United States – Israel Binational Agricultural Research and Development Fund, BARD, Hemed Press, Ltd. Jerusalem, 2000 (290 pages). (Available from the BARD office).

machine vision, greenhouse management, disease prevention and control, alternatives to chemical pesticides, breeding and enhanced production in both animal and plant industries.

In the post 9/11 era, BARD research has increasingly addressed the critical issue of scientific and technological bases for countermeasures to bio-terrorism.³ Scientific activities include epidemiological studies in animal and plant diseases, providing a 'friendly laboratory' for the investigation of diseases that have not yet reached the partner country, development of improved genetic resistance to diseases, intelligent packaging for fruits and vegetables, food security issues, as well as providing opportunities for exchange of information and technologies.

Nor have the environmental issues escaped BARD's attention. BARD funds growing numbers of projects that address ag-related issues of environmental pollution such as animal and agro-chemical wastes, agricultural re-use of urban waste water, as well as 'health foods' (nutraceuticals), and the development and use of state-of-art biological research tools to relieve drought and heat stress in both plants and animals.

Since 2004, BARD has taken a leadership role in promoting scientific cooperation in agricultural problems in the Middle East, particularly with scientific partners in the Palestinian Authority and Jordan. BARD sees such regional cooperation to be well suited to its multi-national mandate and to offer benefits far beyond the investment of each single research dollar by promoting increased food safety, rural development, plant and animal health, and economic security - all important factors in promoting peace and security for the US, Israel and the world.

³ Workshop proceedings 'Science and Technology Based Countermeasures to Food-borne Terrorism'; A. Miller, USDA- FDA, S. Droby, ARO, N. Paster, ARO. (USA 2002). (Available from the BARD office).

BIRD Foundation– The Israel - U.S. Binational Industrial R&D Foundation

Accelerating growth through strategic partnerships

BIRD is a key catalyst for joint Research & Development between American and Israeli companies, focusing on emerging industries and novel technologies with significant commercial potential.

BIRD's Model

Any pair of companies, one Israeli, one American, may jointly apply for BIRD support so long as they have the combined capability and infrastructure to define, develop, manufacture, market, sell and support innovative products based on industrial R&D.

Once the companies have decided to collaborate, they jointly submit a brief executive summary of the proposed project. Following a quick review, BIRD advises the companies on whether they should submit a full proposal. The BIRD Foundation Board of Governors approves full-scale projects. The approval is based on the review by the U.S. National Institute of Standards and Technology (NIST) and the Office of the Chief Scientist (OCS) of Israel's Ministry of Industry, Trade and Labor.

Risk-Sharing Enhances Cooperation

The BIRD Foundation offers conditional grants for joint development projects on a risk-sharing basis. The Foundation funds up to 50% of each company's R&D expenses associated with the joint project. Repayments are due only if commercial revenues are generated as a direct result of the project. If a project fails, BIRD claims no repayments.

BIRD acquires no equity in the companies supported and no intellectual property rights in their products. Nor do we interfere in formulating or running the relationship between the partnering companies.

BIRD's Track Record

BIRD's scope extends to Communications, Life Sciences, Electronics, Electro-optics, Software, Homeland Security, Renewable and Alternative Energy and other sectors of the hi-tech industry. The cumulative sales of products developed through BIRD projects have exceed \$8 billion. Since our inception 31 years ago, we have approved over 770 projects with leading companies in the U.S., for example:

ADM, American Red Cross, Applied Materials, Avaya, Bayer Pharmaceutical, Becton Dickinson, Bio-Rad Laboratories, Eastman Kodak, General Electric, Guidant, IBM, J&J, KLA- Tencor, Molex, Motorola, Procter & Gamble, SanDisk, Spansion, Telcordia, Texas Instruments, Tyco and others.

BIRD encourages all companies - large, medium or small - to submit joint proposals.

Please refer to our website or phone our offices, for the next cycle deadlines.

BIRD Foundation

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Visit our website: www.birdf.com

BSF: The U.S. - Israel Binational Science Foundation

The BSF was founded in 1972 by the U.S. and Israeli governments to serve as the main facilitator of scientific cooperation between the two countries. Since its inception, the BSF has provided several hundred millions of dollars in support of about 4,700 cutting-edge, collaborative scientific research programs, creating a powerful synergy of innovation and scientific progress for the benefit of both countries and for the good of mankind.

BSF-supported projects have brought together the finest scientific minds of the two countries, resulting in many outstanding achievements. The BSF's rigorous selection process has earned it the highest respect in the Israeli and American scientific communities.

The BSF Model

The BSF supports not-for-profit research in a wide range of scientific disciplines. To be eligible for BSF support, a research program must not only be of the highest scientific merit and have a principal investigator from each of the two countries, but also must clearly demonstrate true and substantive collaboration.

Research proposals are subjected to an intensive, competitive peer-reviewed process juried by select scientists from around the globe.

The BSF is governed by a Board that includes five representatives of each country, with the Chair alternating annually between the countries. In addition, the policy and practices of the BSF are periodically evaluated by an independent commission appointed by the Board of Governors.

Achievements

BSF grants are considered highly prestigious, and for good reason. No less than 36 Nobel Prize laureates have been partners in BSF

projects. Perhaps the most dramatic example is the Nobel Prize awarded to Profs. Ciechanover and Hershko (Technion) and to Prof. Rose (University of California at Irvine), for their joint discovery of the Ubiquitin system for protein degradation. Their long-term collaboration was made possible in large part thanks to a number of multiyear grants from the BSF.

In fact, six out of the eight Nobel Prize laureates in science in 2004 were recipients of at least one BSF grant, and several of them have received almost continuous support from the BSF.

Looking to the Future

The BSF recognizes the dynamic nature and changing needs and emphases of science and technology. The ever-growing demand for BSF support, the increasing cost of cutting-edge research, and the new emerging fields of science, all require greater resources. To meet these challenges, the BSF has undertaken to raise additional funding from philanthropic sources. All this, while remaining firmly committed to its fundamental mandate of promoting scientific excellence and deepening U.S. - Israel scientific relations.

The U.S. - Israel Binational Science Foundation

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