

Accelerating U.S. - Israel Neuroscience & Neurotechnology Collaborations



**September 12, 2012
Washington D.C.**



THE PRESIDENT

Jerusalem, September 2012

Dear Conference Participants,

It is with distinct pleasure that I warmly welcome you to the “Accelerating U.S. – Israel Neuroscience & Neurotechnology Collaborations” conference in Washington and congratulate the organizers of this important event.

It is certain that brain research will dominate the next decade of research, providing us with the key that will unlock the as yet undeciphered secrets of the brain and herald new frontiers in this field that will dramatically impact our lives. While advances have already yielded breakthroughs such as brain-controlled prosthetics and cochlear implants that restore hearing which until recently seemed impossible, and have also developed tools that address schizophrenia and Parkinson’s, much work is still needed ahead to deal with diseases such as Alzheimer’s and autism, among many others.

The collaboration between the U.S. and Israel is essential in the quest to explore new ways of putting neuroscience and neurotechnology at the disposal of humanity, with the object of making our world a better and healthier place. This conference offers the opportunity to enhance cooperation between our two countries in a domain that will revolutionize the way we live and the way we think, which is why I believe that together we can undertake this exciting journey and reach new peaks in brain research and new horizons for mankind.

I wish you all a successful conference and a fruitful outcome.

Shimon Peres

Dear Participant,

Welcome to the seminar: “Accelerating U.S. - Israel Neuroscience & Neurotechnology Collaborations”. Neuroscience is one of the most exciting and rapidly developing fields. Research in neuroscience has grown from understanding the basic processes that govern the brain and the individual neuron to discovering and developing cures for neurological disorders. We are still far from truly deciphering the enigma of the human spirit. However, the development of new technologies, such as computational methods and man-machine interface, are moving us out of the lab and into a new era of products based on converging neurotechnologies with drug discoveries. Exciting technological breakthroughs offer new hope to those suffering from neurological disorders as well expanding economic opportunities.

The U.S. is the leader in the field of neuroscience and carries the torch for many of these exciting developments. The State of Israel, though small in comparison, has made significant contributions in areas of computational neuroscience and neurotechnology, drug development, neurodegenerative diseases and rehabilitation devices. Drugs for neurodegenerative diseases such as Copaxone for multiple sclerosis, and Azilect for Parkinson’s disease are two well-known examples of drugs developed in Israel. Transcranial and deep brain stimulation are being used by a number of companies to fight addiction, autism and ALS along with tumor treating fields that have been invented in Israel to treat brain tumors. Israelis are involved in the Blue Brain and lead international brain computational projects aimed at creating the next generation of neurotech drugs and devices.

Significant cooperation between Israel and the United States in neuroscience & neurotechnology already exists. Neuroscience has been one of the most successful areas of collaborative research sponsored by the U.S.-Israel Binational Science Foundation (BSF). The Israel-U.S. Binational Industrial Research and Development Foundation (BIRD) is actively engaged in bringing together joint U.S.-Israel technological partnerships, and shares the risk by providing grants to support research cooperation that will bring advancements in neuroscience to market. The U.S.-Israel Science and Technology Foundation (USISTF) seeks to catalyze new opportunities for mutually beneficial collaboration. Together, we are creating a cooperative platform to facilitate joint activities and expand creativity and achievements in this important sector.

The goal of the seminar in bringing together scientists, developers, and entrepreneurs is to showcase their achievements, discuss challenges and outline the road ahead. Our objective is to turn scientific breakthroughs into economic growth and offer hope for those suffering from the challenges of neurodegenerative diseases. You will hear from world-renowned experts and learn about cutting-edge innovation. We hope today’s event will lead you to the realization that both countries have a great deal to gain by working together.

Sincerely yours,

Dr. Yair Rotstein

Executive Director BSF

Dr. Eitan Yudilevich

*Executive Director
BIRD Foundation*

Ann Liebschutz

Executive Director USISTF

Agenda

8:00 AM - 9:00 AM	Registration and Breakfast
9:00 AM - 9:05 AM	Welcome by The National Academies Mr. Bruce Darling , <i>Executive Officer, NAS/NRC</i>
9:05 AM - 9:10 AM	Greetings Dr. Eitan Yudilevich , <i>BIRD Foundation</i>
9:10 AM - 9:35 AM	The Advantages of Israel - U.S. Cooperation in Neuroscience <i>Session Chair - Ms. Ann Liebschutz, U.S. - Israel Science & Technology Foundation</i> The Honorable Patrick Kennedy , <i>Co - Founder, One Mind for Research</i> The Honorable Dr. Michael B. Oren , <i>Ambassador of Israel to the U.S.</i>
9:35 AM - 10:20 AM	Session I: Memory & Brain Training <i>Session Chair - Prof. Alcino Silva, UCLA</i> Prof. John Disterhoft , <i>Northwestern University</i> Dr. Henry Mahncke , <i>President & CEO, Posit Science</i> Prof. Kobi Rosenblum , <i>University of Haifa</i>
10:20AM-11:00AM	Session II: Brain Computation & Machine Interface <i>Session Chair - Dr. Rita Z. Goldstein, Brookhaven National Laboratory</i> Mr. Chad Bouton , <i>Research Leader, Battelle</i> Prof. Andrew Schwartz , <i>University of Pittsburgh</i> Mr. Imad Younis , <i>CEO, Alpha Omega</i>
11:00AM-11:15AM	Revolutionizing Prosthetics COL Geoffrey Ling, M.D., Ph.D. , <i>Defense Sciences Office, DARPA</i>
11:15AM-11:35AM	Coffee Break
11:35 AM - 12:30PM	Session III: Trauma & Stroke <i>Session Chair - Prof. Bernice Grafstein, Weill Cornell Medical College</i> Prof. Alon Friedman , <i>Ben Gurion University</i> Dr. James P. Kelly , <i>Director, National Intrepid Center of Excellence</i> Dr. Jeffrey Lewine , <i>The Mind Research Network</i> Mr. Michael Singer , <i>President and CEO, BrainScope</i>
12:30PM - 1:00 PM	Session IV: Post Traumatic Stress & Recovery <i>Session Chair - Prof. Hermona Soreq, Hebrew University</i> Prof. Yuval Neria , <i>Columbia University</i> Prof. Zahava Solomon , <i>Tel Aviv University</i>

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1:00 PM - 2:00 PM	Lunch
2:00 PM - 2:10 PM	The Vision of Neurotechnology by President Shimon Peres (by video)
2:10 PM - 2:20 PM	Israel Brain Technologies Initiative Dr. Moran Cerf , <i>U.S. Relations Director, IBT</i>
2:20 PM - 2:35 PM	The Future of U.S. - Israel Cooperation in Neuroscience Dr. Yair Rotstein , <i>U.S. - Israel Binational Science Foundation</i>
2:35 PM - 3:05 PM	Keynote Address - Starting Anew: The Real Promise of Neuroscience for Neuropsychiatric Disorders Dr. Steven Hyman , <i>Director of the Stanley Center for Psychiatric Research, Broad Institute at Harvard and MIT</i>
3:05 PM - 3:35 PM	Session V: Brain Cancer <i>Session Chair - Dr. Henry Brem, Johns Hopkins University School of Medicine</i> Mr. Bill Doyle , <i>Chairman, Novo-Cure & Managing Director, WFD Ventures</i> Dr. Thomas Foo , <i>Chief Scientist, MRI, GE Global Research</i>
3:35 PM - 4:35 PM	Session VI: Neurodegenerative Diseases <i>Session Chair - Dr. Alan I. Leshner, CEO, American Association for the Advancement of Science & Executive Publisher, Science</i> Dr. Jacobo Mintzer , <i>Medical University of South Carolina</i> Mr. Ronen Gadot , <i>CEO, ElMinda</i> Dr. Jeffrey S. Nye, M.D., Ph.D. , <i>VP and Global Head, Neuroscience External Innovation, Janssen Pharmaceutical Companies of J&J</i> Mr. Eyal Zadicario , <i>VP R&D and Neuro Programs Manager, Insightec</i> Dr. Vincent Zurawski , <i>Founder, Varinel</i>
4:35 PM - 4:45 PM	Commercializing Healthcare Technologies in the U.S. - Challenges and Opportunities Ms. Susan W. Berson , <i>Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.</i>
4:45 PM - 4:55 PM	The Global Neurotechnology Industry 2012 and Beyond Mr. Zack Lynch , <i>Executive Director, Neurotechnology Industry Organization</i>
4:55 PM - 5:00 PM	Closing Remarks Ms. Ann Liebschutz , <i>U.S. - Israel Science & Technology Foundation</i>

Speakers

Mr. Bruce Darling

Executive Officer, NAS/NRC

Bruce B. Darling is the Executive Officer for the National Academy of Sciences and National Research Council. He previously served as vice president for laboratory management at the University of California (UC). There, he was responsible for management oversight of the three national laboratories operated by the university for the U.S. Department of Energy: Lawrence Berkeley National Laboratory, for which UC is sole contractor, and Lawrence Livermore and Los Alamos National Laboratories, which are managed by limited liability companies formed by the university and three private-sector partners.



From 1996 to 2008, Darling served as the UC system's vice president for university and external relations, senior vice president for university affairs, and executive vice president for university affairs. In those roles, he led the university's state and federal government relations; acquisition of the university's state-funded budget; communications with the news media and public; alumni relations; and fundraising initiatives. He also had primary responsibility for integrating strategic and operational matters with the university's Board of Regents. Darling directed UC's 2003 response to management lapses at the Los Alamos National Laboratory, drawing positive responses from the Department of Energy and the House Committee on Energy and Commerce's Subcommittee on Oversight and Investigations.

Darling graduated summa cum laude from UCLA in 1974 and began his career as a grants assistant at the National Science Foundation. From 1978-80, he was special assistant to then NSF Director Richard C. Atkinson. In 1980, Darling moved to the University of California, San Diego. From 1993-1996 he was UC San Diego's vice chancellor for development and university relations and president of the UC San Diego Foundation.

His professional honors include election as a fellow of the American Association for the Advancement of Science, the University of California Presidential Medal, the UC San Diego Foundation *Civis Universitatis* Award, the National Science Foundation Commendation for Notable Service, and the Rod Rose Award for the most outstanding paper published in the Journal of the Society of Research Administrators.

Darling serves on the board of the California Council on Science and Technology and the National Science Foundation's Subcommittee on Re-competition of Major Research Facilities. He was a member of the California Commission for Impartial Courts and the advisory board for UC Santa Barbara's Donald Bren School for Environmental Science and Management. In 2002 and 2004, he co-chaired education facilities bond measure campaigns, which secured voter approval for \$25 billion for facilities construction and modernization at California's public schools, colleges, and universities.

Dr. Eitan Yudilevich*Executive Director, BIRD Foundation*

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

In six years of his tenure, BIRD's Board of Governors approved more than 120 full-scale, joint U.S.-Israeli company-to-company projects, almost one third of them in the Life Sciences. From the outset, emphasis was given to new areas such as Renewable and Alternative Energy, culminating in the initiation of a new U.S. - Israeli program named "BIRD Energy". Recently a new initiative was launched in the area of Homeland Security. Dr. Yudilevich has also focused attention on regional cooperation, specifically, within the U.S.-Israel-Jordan cooperation program named "TRIDE".

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., General Manager of the Missiles Division and Vice President of Marketing and Business Development. 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 published by highly regarded journals. He is a Senior Member of the IEEE and has been an active participant in IEEE Engineering Management conferences, where he has presented papers on innovation management and on Real Options for R&D project evaluation.

Dr. Yudilevich lives in the city of Karmiel, where he is a member of the Management Committee at the Ort Braude College. He was born in Santiago, Chile and is married to Bruria. They have three children: Gali, Ori and Dan.

**Dr. Yair Rotstein***Executive Director, U.S.- Israel Binational Science Foundation (BSF)*

Dr. Yair Rotstein is the third Executive Director of the BSF since it established in 1972, and assumed office in Nov. 2004.

Under his leadership the Foundation has modernized its operations, completing an internet-based application submission and processing system, moved to a modern facility, and introduced new programs, including travel grants for PhD students, 'Transformative Science' grant program, and several joint funding programs with the NSF. 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 as an airborne officer. He then completed a PhD at the University of California, Riverside. 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 over 60 refereed articles, and a large number of technical and commercial reports. He also held twice a one-year appointment, and numerous short term appointments, as a Research Professor in Strasbourg University, where he investigated the structure, as well as the food and wine of the Rhine Valley.

Dr. Rotstein is married to Lea, and they have three children and five grandchildren.



Ms. Ann Liebschutz*Executive Director, United States - Israel Science & Technology Foundation*

Ann Liebschutz is the Executive Director for the United States - Israel Science & Technology Foundation [USISTF]. In her position, she directs the Foundation's activities, strategic planning, and leads the execution of its mission to facilitate cooperative opportunities between U.S. and Israeli institutions.



Ann came to USISTF after serving as a Legislative Assistant and Counsel in the office of United States Senator Jim Bunning. While working as Senior Staff in the U.S. Senate, she led a diverse legislative portfolio which included Commerce, Science & Technology, Homeland Security, Transportation, Veteran's Affairs, and Workforce Development issues.

In 2004, Ann served as the Finance Director and Campaign Counsel for Citizens for Bunning, U.S. Senator Bunning's re-election campaign. Under her leadership, the campaign achieved the highest amount ever raised for a statewide race in Kentucky at the time. Prior to the Senate race, Ann served as Deputy Finance Director for the Fletcher for Governor gubernatorial campaign while simultaneously serving as the Kentucky State Party Victory Finance Director.

Previously, she worked in a private law practice in Chicago, Illinois where she facilitated and managed diverse business transactions and regulatory compliance issues.

A licensed Attorney, Ann holds a Juris Doctor degree from the John Marshall Law School in Chicago, Illinois, which is internationally known for its top Intellectual Property Law Program. She served on the Executive Board of the John Marshall Journal of Computer & Information Law [JCIL].

Ann has a background in science as she holds a degree in Physics from Lake Forest College in Lake Forest, Illinois.

In her personal time, Ann trains in competitive swimming and running marathons.

Congressman Patrick Kennedy*Co-Founder, One Mind for Research*

Congressman Patrick Kennedy served 16 years in the U.S. House of Representatives and is predominantly known as the author and lead sponsor of the Mental Health Parity & Addiction Equity Act of 2008. This dramatic piece of legislation provides tens of millions of Americans who were previously denied care with access to mental health treatment.



Now, Congressman Kennedy is the co-founder of One Mind for Research, a newly formed national coalition that is seeking new treatments and cures for neurologic and psychiatric diseases of the brain that afflict one in every three Americans. One Mind for Research is dedicated to dramatic enhancements in funding and collaboration in research across all brain disorders in the next decade. This historic grassroots endeavor unites efforts of scientists, research universities, government agencies, industry, and advocacy organizations across the country. Congressman Kennedy is bringing everyone together to map out a blueprint for the first plan of basic neuroscience that will become the roadmap leading to the off-ramps to cures for of all neurological disorders that affect 1 in 3 Americans.

Congressman Kennedy has authored and co-sponsored dozens of bills to increase the understanding and treatment of neurological and psychiatric disorders, including the National Neurotechnology Initiative Act, the Genomics and Personalized Medicine Act, the COMBAT PTSD Act, and the Alzheimer's Treatment and Caregiver Support Act.

Congressman Kennedy is a winner of the American College of Neuropsychopharmacology Distinguished Service Award, the Society for Neuroscience Public Service Award, the Autism Society of America Congressional Leadership Award, the Depression and Bipolar Support Paul Wellstone Mental Health Award, and the Epilepsy Foundation Public Service Award. He is also founder of the Congressional Down Syndrome Caucus and the 21st Century Healthcare Caucus.

Dr. Michael B. Oren*Ambassador of Israel to the United States*

A graduate of Princeton and Columbia, Dr. Oren has received fellowships from the U.S. Departments of State and Defense, and from the British and Canadian governments. Formerly, he was the Lady Davis Fellow of Hebrew University, a Moshe Dayan Fellow at Tel-Aviv University, and a Distinguished Fellow at the Shalem Center in Jerusalem. He has also served as a visiting professor at Harvard, Yale, and Georgetown.

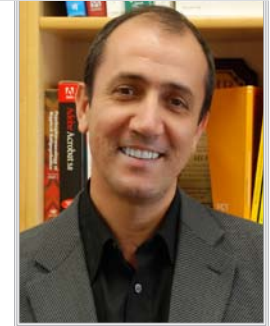


Ambassador Oren is an accomplished author, and an avid historian. His two most recent books, *Six Days of War: June 1967 and the Making of the Modern Middle East* and *Power, Faith, and Fantasy: America in the Middle East, 1776 to the Present*, were both New York Times bestsellers. He has won the Los Angeles Times' History Book of the Year prize, a National Council of the Humanities Award, and the National Jewish Book Award. He has also written extensively for *The Wall Street Journal*, *The New York Times*, and *The New Republic*, where he was a contributing editor.

Ambassador Oren and his wife, Sally, currently reside in Washington, D.C. They have three children - Yoav, Lia, and Noam.

Dr. Alcino J. Silva*UCLA*

During his post-doctoral work at the Massachusetts Institute of Technology with Nobel Laureate Dr. Susumu Tonegawa, Dr. Alcino J. Silva pioneered the field of Molecular and Cellular Cognition. His first independent position (1992) was with the Cold Spring Harbor Laboratory, NY, where his laboratory had a key role in the development and expansion of Molecular and Cellular Cognition into a mainstream field of Neuroscience. In 2002 Dr. Silva founded and became the first President of the Molecular and Cellular Cognition Society, an international organization with more than 4000 members and with branches in North America, Asia and Europe. In 2006/2007 Dr. Silva served as Scientific Director of the Intramural Program of the National Institute of Mental Health, MD. He is currently Professor of Neurobiology, Psychiatry & Biobehavioral Sciences, and Psychology, he heads the Center for Genetic Studies of Cortical Plasticity, and serves as the Director of the UCLA Integrative Center for Learning and Memory. He is also currently a member of the Board of Regents of the University of Minho, Portugal.



His laboratory is studying the biology of learning and memory. His research group is also unraveling mechanisms and developing treatments for learning and memory disorders, such as those associated with Neurofibromatosis type I and Tuberous Sclerosis. Recently, his studies of these disorders in mice have led to clinical trials for the first targeted treatment for learning disabilities.

He has been awarded a number of prizes and distinctions, including most recently the Order of Prince Henry (one of the highest distinctions conferred by the Portuguese Government), the Marco Canavezes Medal of Science, the Senior Roche Award For Translational Neuroscience, and the Leslie Chair in Pioneering Brain Research.

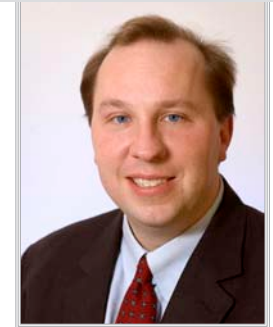
Prof. John Disterhoft*Northwestern University*

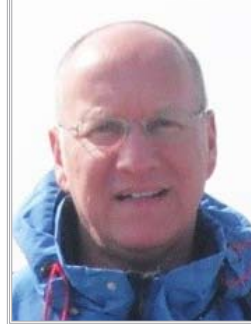
John Disterhoft, Ph.D. is the Magerstadt Memorial Research Professor of Physiology at Northwestern University Feinberg School of Medicine. Dr. Disterhoft studies the neurobiology of associative learning in the mammalian brain at the molecular, cellular and systems levels using both in vivo and in vitro techniques. His laboratory focuses on characterizing how neurons store new information during associative learning. An important component of his research program is identifying mechanisms for altered learning in aging. He uses a combination of behavioral, biophysical and molecular biological approaches to address these questions.

Although most of his experiments are done with animals, he also studies learning in humans using behavioral and imaging techniques. Disterhoft's laboratory is in a unique position to translate the findings from animal research to humans to better understand learning in the young and aging brain.

**Dr. Henry Mahncke***President & Chief Executive Officer, Posit Science*

Henry Mahncke, Ph.D., President & Chief Executive Officer of Posit Science, has a background in neurophysiology, brain imaging, and psychophysics. He has served as a management consultant for McKinsey & Company, a leading international consulting group, where he focused on R&D organization and strategy work for pharmaceutical and medical device companies, and led McKinsey's first work in video games. At Posit Science, he has overseen the development of numerous brain-plasticity-based cognitive training programs that improve cognitive function. Dr. Mahncke served as the primary organizer and a principal investigator on the Improvement in Memory with Plasticity-based Adaptive Cognitive Training (IMPACT) study, the largest study in cognitive training ever performed with a commercially available training program. He holds a BA from Rice University and a PhD from the University of California, San Francisco.



Prof. Kobi Rosenblum*University of Haifa*

Professor Kobi Rosenblum is the head and founder of the Sagol Department of Neurobiology at the University of Haifa (2004- present, currently 10 faculty members and over 45 post-graduate students, <http://neuroscience.haifa.ac.il/>). In addition, he established the center for gene manipulation in the brain, producing and developing new viral vectors to manipulate specific gene expression in specific population of cells in the brain (<http://cgmb.haifa.ac.il/>). His research is focused on the molecular and cellular mechanisms underlying learning and memory in the mammalian cortex. He is interested in memory consolidation, taste perception and learning, cognitive enhancers and the role translation of mRNA to protein plays a role in Alzheimer disease and aging. In the last 5 years he published over 30 peer reviewed journal articles and obtained over \$ 3,000,000 from competitive grant schemes, mainly European. He is collaborating with many different laboratories around the world and serves as a coordinator in EU initiatives (e.g. ERANET system biology). Some of his basic science work was translated recently to patents in the field of cognitive enhancers and Alzheimer disease. He is a member in the councils of different Israeli and European societies, including an elected vice-president for the European molecular and cellular cognition society.

The current laboratory of Professor Rosenblum contains over 15 post-doc and PhD students who are using different technologies, ranging from fMRI in human, rodents behavior, electrophysiology, imaging, pharmacology, biochemistry and molecular biology (<http://neuroethocms.haifa.ac.il/rosenblum/>).

Dr. Rita Z. Goldstein*Brookhaven National Laboratory*

Dr. Goldstein is a tenured scientist at the medical department at Brookhaven National Laboratory. Dr. Goldstein directs the Neuropsychomaging group that uses multimodality functional neuroimaging methods to explore the neurobiological basis of impaired cognitive and emotional functioning in human drug addiction and other disorders of self-control. An important application of this research is to facilitate the development of intervention modalities that would improve treatment outcome in drug addiction and other chronically relapsing disorders of self-regulation. Dr. Goldstein received her B.A. degree (double major in Psychology and French), cum laude, from Tel Aviv University, Israel, in 1992. She received her Ph.D. degree in Health Clinical Psychology, with award of academic merit, from the University of Miami, FL, in 1999, after completing a yearlong internship in clinical neuropsychology at the Long Island Jewish Medical Center, NY. She then completed her post-doctorate training on a fellowship on Brain Imaging and Alcohol Abuse from the National Institutes of Health, under the mentorship of Nora D. Volkow (now director of NIDA). Dr. Goldstein received her license in clinical psychology in 2002. Dr. Goldstein became Assistant Scientist at the medical research department at Brookhaven National Laboratory in 2002, advancing to the Associate position in 2004, and to a Scientist position in 2006; tenure was awarded in 2008. Dr. Goldstein is also an affiliate in of New York at Stony Brook. She has authored or co-authored numerous well-cited peer-reviewed manuscripts and book chapters, focusing on the role of the prefrontal cortex in addiction. She became a member of the American College of Neuropsychopharmacology in January 2010. Goldstein's research has been independently funded by several federal and private agencies (including NIDA, NIMH, and National Alliance for Research on Schizophrenia and Depression).

Mr. Chad Bouton*Research Leader, Battelle*

Chad Bouton is a Research Leader at Battelle, the world's largest independent R&D organization. He serves as principal investigator for numerous cutting-edge research and development programs at Battelle. His expertise includes bio-sensors, neural prosthetics and decoding, and linear and nonlinear signal processing and control methods.



Bouton developed neural decoding methods that allowed the first person to control a wheelchair with a brain implant. He also developed new signal processing methods to help surgeons find cancerous tissue more quickly and effectively. His work has been featured in high-profile news programs including 60 Minutes and he was recognized by the US Congress in 2010.

In 2010, Bouton was awarded with Battelle's highest honor, Inventor of the Year, with a total of 67 patents internationally. In 2011, he became a Distinguished Inventor at Battelle and was recognized by the National Academy of Engineering in that same year. Finally, Bouton has received three R&D 100 Awards, including the R&D Magazine Editor's Choice Award for one of the best new technologies of the year.

Prof. Andrew Schwartz*University of Pittsburgh*

Dr. Schwartz received his Ph.D. in Physiology from the University of Minnesota in 1984 with a thesis entitled "Activity in the Deep Cerebellar Nuclei During Normal and Perturbed Locomotion." He then went on to a postdoctoral fellowship at the Johns Hopkins School of Medicine where he worked with Dr. Apostolos Georgopoulos, who was developing the concept of directional tuning and population-based movement representation in the motor cortex.



In 1988, Dr. Schwartz began his independent research career at the Barrow Neurological Institute in Phoenix. There, he developed a paradigm to explore the continuous cortical signals generated throughout volitional arm movements. After developing the ability to capture a high fidelity representation of movement intention from the motor cortex, Schwartz teamed up with engineering colleagues at Arizona State University to develop cortical neural prosthetics. Schwartz moved from the Barrow Neurological Institute to the Neurosciences Institute in San Diego in 1995 and then to the University of Pittsburgh in 2002.

Recently, the neural prosthesis work has progressed to the point that monkeys can control motorized arm prostheses in a self-feeding task and to orient a prosthetic hand to operate a doorknob with an extension to hand shaping. In collaboration with clinical colleagues at the University of Pittsburgh, this technology is now being used by paralyzed subjects to operate a high-performance prosthetic arm and hand.

Speakers

Mr. Imad Yunis

CEO, Alpha Omega

Entrepreneur, in the field of medical devices.

Established Alpha Omega, in 1993, and turned it into a global company offering advanced solutions for the functional neurosurgery and neuroscience markets.

Mr. Yunis serves today as the President of Alpha Omega Group. Before, Mr. Yunis had several positions at Fidelity Medical Ltd. and the Technion Medical School at Haifa.

Working closely with scientists, physicians and partners, Mr. Yunis strives to be a significant player in the field of neurology and Neurosurgery by offering new solutions and therapies for neurological and psychiatric diseases.



Speakers

COL Geoffrey Ling, M.D., Ph.D., FAAN

Defense Sciences Office, DARPA

COL Geoffrey Ling, MC, USA is a program manager at the Defense Advanced Research Projects Agency (DARPA). His portfolio includes Revolutionizing Prosthetics, Fracture Putty, Preventing Violent Explosive Neuro Trauma (PREVENT), Restoring Plasticity and Acceleration of Injury Recovery (REPAIR), Predicting Health and Disease (PHD) and others.

Dr. Ling is also a professor and interim chairman of neurology at the Uniformed Services University of the Health Sciences (USUHS) in Bethesda, Maryland, director of neuro critical care at Walter Reed Army Medical Center (WRAMC) and attending neuro critical care physician at Johns Hopkins Hospital. He deployed to both Afghanistan (2003) and Baghdad, Iraq (2005) and additionally has done shorter missions as a member of the Joint Chiefs of Staff's Gray Team. He is a member of the American Neurological Association, a fellow of the American Academy of Neurology, "A" designated in his medical specialty and is a member of the Order of Military Medical Merit. He has published over 150 peer-reviewed journal articles, reviews and book chapters, including the traumatic brain injury chapter in Cecil's Textbook of Medicine. He serves on the NIH-NINDS Advisory Council, the executive board of the Neuro Critical Care Society and other similar positions.



Prof. Bernice Grafstein

Weill Cornell Medical College

Prof. Bernice Grafstein is a Professor of Physiology & Biophysics and the Vincent & Brooke Astor Professor in Neuroscience at Weill Cornell Medical College in New York City. She received her B.A. in physiology at the University of Toronto and her Ph.D. in neurophysiology at McGill University in Montreal, from which she recently received an honorary degree. As a graduate student she trained as an electrophysiologist, studying structure-function correlations in the cerebral cortex. Her work on cortical spreading depression has become a classic in its field. She subsequently became interested in nervous system development and regeneration, and is known for her work on intracellular transport of protein in normal and regenerating neurons, as well as other forms of molecular signaling among various cell types in the brain. She has been President of the Society for Neuroscience and is currently a Trustee and Vice-President of the Grass Foundation, which supports training and research in neuroscience.



Prof. Alon Friedman, M.D.

Ben-Gurion University

Prof. Alon Friedman was born in Yaffo, Israel in 1964. He graduated (MD-PhD) from the Ben-Gurion University of the Negev in 1992. He specialized in Neurosurgery at Soroka University Medical Center (1996-2001) and in 2002 he moved to Berlin, Germany to fill the position of a guest scientist for a period of three years at the Charité Medical University under the prestigious fellowship from the Alexander von Humboldt Foundation.

Today, Prof. Friedman leads a major neurophysiology laboratory and he serves as associate professor at the Departments of Physiology and Biomedical Engineering at the Ben-Gurion University of the Negev and the Institute of Neurophysiology at the Charité Medical University. He is also acting as the director of the Zlotowski Center for Neuroscience and is heading the teaching program for Brain and Cognitive Sciences, at Ben-Gurion University of the Negev. His research focuses on the pathophysiology of brain disorders and the effects of stress on the nervous system. His group is involved in a multidisciplinary, human and animal research studying underlying mechanisms and novel therapies for the prevention and treatment of brain diseases, specifically injury-related epilepsy, stroke and neurodegeneration. Dr. Friedman is the author of numerous scientific publications, both as co-author of books and collective volumes and articles in leading scientific journals. In 2007 Prof. Friedman won the prestigious International Michael Prize for Epilepsy Research.



Dr. James P. Kelly, MA, MD, FAAN

Director, National Intrepid Center of Excellence , Walter Reed National Military Medical Center

Dr. James P. Kelly, a neurologist who is one of America's top experts on treating concussions, serves as the Director of the National Intrepid Center of Excellence (NICoE), which opened in 2010 and is located on the campus of the Walter Reed National Military Medical Center in Bethesda, MD.



While serving as the NICoE's Director, Kelly is professor of neurosurgery and physical medicine and rehabilitation at the University of Colorado School of Medicine. His past positions include assistant dean for graduate medical education at the University of Colorado School of Medicine, and the neurology residency program director at Northwestern University Feinberg School of Medicine.

Dr. Kelly has also served as director of the Brain Injury Program at the Rehabilitation Institute of Chicago. He was the neurological consultant for the Chicago Bears of the National Football League and is consulted frequently by professional, elite amateur and youth athletes who have sustained concussions.

Kelly co-authored the sports concussion guidelines of the American Academy of Neurology and the Standardized Assessment of Concussion that is widely used in athletic and military settings. Additionally, for the past ten years, Dr. Kelly has been named as one of America's Top Doctors as well as being listed in several Who's Who publications.

In addition, Kelly is a fellow of the American Academy of Neurology and a diplomat in Neurology of the American Board of Psychiatry and Neurology; past-president of the Colorado Society of Clinical Neurologists; and a consulting neurologist to the Defense and Veterans Brain Injury Center – a component center of the Defense Centers of Excellence (DCoE). He was the first chairman of the Defense Health Board's Traumatic Brain Injury External Advisory Subcommittee for Military Clinical Care, Research and Education.

After attaining a bachelor's and master's degree in psychology from Western Michigan University, Kelly graduated from medical school at Northwestern University and completed his neurology residency and behavioral neurology fellowship at the University of Colorado.

Dr. Jeffrey David Lewine

Mind Research Network

Jeffrey David Lewine, PhD is the Director of Business Development and a Professor of Translational Neuroscience at the Mind Research Network in Albuquerque, New Mexico. He is also an adjunct associate professor of Psychology and Neurology at the University of New Mexico, and the Director of Neuroscience for Lovelace Scientific Resources, a New Mexico based clinical-trials company.



Dr. Lewine's research uses behavioral, neurophysiological, and brain imaging methods to study brain structure and function in health and disease. He has done research on a wide range of clinical conditions with an emphasis on autism spectrum disorders, traumatic brain injury, and post-traumatic stress disorder. These investigations have been funded, in part, by Cure Autism Now, the Illinois Department of Veterans Affairs, the National Science Foundation, and the National Institutes of Health. Dr. Lewine is a member of the Board of Directors for the Lovelace Biomedical and Environmental Research Institute, the American Clinical Magnetoencephalography Society and the International Society for the Advancement of Clinical Magnetoencephalography. Dr. Lewine is the co-author of a textbook on functional brain imaging and he has co-authored more than 100 articles and book chapters.

Mr. Michael Singer

*President and Chief Executive Officer,
BrainScope*

Michael Singer brings more than 20 years of executive leadership, healthcare and financial experience to BrainScope. He most recently was President, Revolution Health Investments, Revolution LLC, where he oversaw the health-related portfolio at Revolution. In particular he managed all external activities (partnerships, M&A, and investments) and assessed all new business opportunities at Revolution Health Group. Among his key achievements, he initiated, negotiated and completed several transactions that together created the Revolution Health Network and was instrumental in the merger of Revolution Health with Waterfront Media.

Prior to Revolution, Mr. Singer was an executive at Microsoft Corporation reporting directly to the Chief Technical Officer. His responsibilities included developing small business and healthcare strategies. Prior to this he was the Chief Financial Officer, Executive Vice President of Corporate Development and a Board member for Data Critical Corporation, a Seattle-based venture-backed wireless healthcare informatics and medical device company. At Data Critical he was responsible for facilitating the company's IPO, overseeing all financial functions, managing acquisitions and partnerships and eventually led the sale of Data Critical to GE.

Prior to his executive appointments, Mr. Singer was a healthcare investment banker and M&A generalist for New York-based Wolfensohn & Co., and San-Francisco-based Montgomery Securities and Alex Brown.

Mr. Singer holds a Ph.D. from the London School of Economics.



Prof. Hermona Soreq

Hebrew University

Hermona Soreq is the Charlotte Schlesinger Professor of Molecular Neurobiology and a founding member of the Hebrew University's Edmond and Lily Safra Center for Brain Sciences. Her research is focused on the mechanisms underlying malfunctioning of acetylcholine signaling in muscle, nerves and blood cells, which entails neuromuscular, neurodegenerative (Parkinson's and Alzheimer's), and inflammatory diseases, involves changes in re-mRNA processing and micro-RNA regulators, and led to over 260 peer-reviewed journal articles and 7 books. Therapeutic interference with impaired signaling processes by Oligonucleotide-mediated treatment is currently in Phase 2 clinical trials in Jerusalem and Tel Aviv for inflammatory bowel disease (at BioLineRx).

The past head of the Silberman Institute of Life Sciences at the Hebrew University (1995-2000), President of the Israeli Society of Biochemistry and Molecular Biology (2000-2002) and the first elected woman Dean of the Hebrew University's Faculty of Science (2005-2008), Soreq returned to devote most of her time to her own research and to leading her research team. She collaborates with top scientists worldwide, has been a member of the European Community's Health advisory committee for the past 6 years and consults the Israeli Ministers of Health, Commerce and Science. The recognition of her role has led to honorary PhD degrees from Stockholm (1996), Erlangen-Nuremberg (2007), and Ben-Gurion University (2007), and prizes from the Minister of Health (2000), the Landau (2005) and Teva foundations (2006), the Lise Meitner Alexander Humboldt Research Prize (2009) and a Miller Fellowship at UC Berkeley (2009).

With 12 patents, 2 recombinant proteins and one DNA-based drug at different stages of clinical trials, Soreq is also an Adjunct Research professor at the Arizona State University BioDesign Institute and serves on the Board of Governors of The Hebrew University and the Technion – Israel Institute of Technology.



Prof. Yuval Neria

*Columbia University
New York State Psychiatric Institute*

Yuval Neria is a Professor of Clinical Psychology at Columbia University, Departments of Psychiatry and Epidemiology, and Director of Trauma and PTSD at the New York State Psychiatric Institute (NYSPI). He received his BA degrees in Philosophy and Political Science and his MA degree in Clinical Psychology from Hebrew University in Jerusalem, and his PhD in Psychology from Haifa University, Israel (1994). He was on the faculty of Tel Aviv University until his recruitment to Columbia University after the 9/11 attacks (2002).



Prof. Neria's research has been focused on the mental health consequences of exposure to extreme traumatic events. He is involved in the development of novel, neuroscience informed, treatment for PTSD, and is currently focused on the examination of neurobiological mechanisms of deficient extinction and threat processing in individuals exposed to trauma.

Prof. Neria has led and collaborated on numerous epidemiological, clinical, and neuroimaging studies in PTSD, funded by the National Institute of Mental Health (NIMH), NARSAD and private foundations since 2002. Currently, his lab at Columbia and NYSPI is focused on identification of brain and behavioral biomarkers of PTSD. By using Functional Magnetic Resonance Imaging (fMRI) to identify brain circuits underlying posttraumatic stress disorder (PTSD), Prof. Neria and his team are able to probe for the first time brain based markers of clinical improvement in response to PTSD treatment.

Prof. Neria has authored more than 120 articles and book chapters, edited three text books, including "9/11: mental health in the wake of terrorist attacks" (Cambridge University Press, 2006) and "The Mental Health Consequences of Disasters" (Cambridge University Press, 2009), and published a war-novel "Fire" (Zmora Bitan, Hebrew, 1986).

Prof. Zahava Solomon

Tel-Aviv University

Zahava Solomon is a Professor of Psychiatric Epidemiology and Social Work at Tel-Aviv University and the former Head of the Adler Research Center. Prof. Solomon joined the I.D.F. (Israeli Defense Force) in 1981 and served as head of the Research Branch in the Medical Corps between the years 1981-1992 (Lt. Colonel ret.)



In 1990 she joined Tel-Aviv University. During the years 1994-1996, Prof. Solomon served as Dean of the Bob Shapell Social Work School and between 1997-2001 she served as the Dean of the special programs at Tel Aviv University.

Her research focuses on traumatic stress and especially on the psychological sequel of combat stress reactions, war captivity and the Holocaust. Prof. Solomon published six books on psychic trauma related issues, and over 300 articles in leading journals and more than 60 chapters.

Prof. Solomon was a member of the Editorial board of the Journal of Traumatic Stress and is currently with the editorial board of The Journal of Personal and Interpersonal Loss. Prof. Solomon was a member of the DSM-4 Advisory sub committee for PTSD, and earned numerous Israeli and international awards and research grants including the Laufer Award for Outstanding Scientific Achievement in the field of PTSD by the International Society of Traumatic Stress Studies. In 2009, Prof. Solomon was awarded the Prize of Israel for research in social work, which is the highest academic distinction in Israel.

Dr. Moran Cerf

*U.S. Relations Director,
Israel Brain Technologies*

Dr. Cerf is a neuroscientist studying how conscious percepts are formed in our brain. Dr. Cerf records the activity of individual nerve cells directly from the brains of patients undergoing neurosurgery. The patients are implanted with electrodes deep inside their brain for clinical purposes. Following the implantation, Dr. Cerf is able to use the implanted electrodes to study the ways by which thoughts and memories are registered in our brain. In his work Dr. Cerf has shown the ability to project the patients' thoughts onto a screen in front of their eyes by reading the activity of cells within their brain. His current studies show how patients are able to use the feedback from the electrodes in their brain to regulate their neural activity and emotions and to alter their decisions as they happen. Additionally, the patients are able to activate and communicate their thoughts externally and operate devices by their sheer conscious thoughts.

Dr. Cerf holds appointments at the UCLA Department of Neurosurgery, the Stern School of Business at NYU and the Computation and Neural Systems Department at Caltech. He is also a founding member of the Human Intracranial Research Foundation. Dr. Cerf earned a Bachelor's in Physics and a Master's in Philosophy of Science from Tel-Aviv University, and a PhD in Neuroscience from Caltech. His research has been published in leading neuroscience journals and was featured in the media repeatedly. Dr. Cerf is also active in the story-telling community and stories about his science career or his former career as a hacker are featured on NPR.

**Prof. Steven E. Hyman, MD**

*Director, Stanley Center for Psychiatric
Research, Broad Institute at Harvard and MIT*

Professor Steven E. Hyman, MD, is Director of the Stanley Center for Psychiatric Research at the Broad Institute of MIT and Harvard. He is also Harvard University Distinguished Service Professor of Stem Cell and Regenerative Biology.

Dr. Hyman was one of the key architects of the Broad Institute, when it was launched in 2004 as a bold experiment in biomedicine and became a permanent institution in 2009. Dr. Hyman joined the Broad after a decade of service as Provost of Harvard University. As Provost he served as Harvard's chief academic officer, and also had a special focus on the development of collaborative initiatives that span multiple disciplines and cross institutional boundaries. From 1996 to 2001, he served as Director of the US National Institute of Mental Health (NIMH). At NIMH he emphasized investment in emerging genetic technologies that might address the complexity of neuropsychiatric disorders, on neuroscience, and also initiated a series of large clinical trials including a focus on children, a population about which little was known with certainty.

Prior to his government service he was the first faculty Director of Harvard University's interdisciplinary Mind, Brain, and Behavior Initiative. In the laboratory he studied the control of neural gene expression by neurotransmitters, especially dopamine, with the goal of understanding mechanisms that regulate emotion and motivation in health and illness.

Dr. Hyman is Editor of the Annual Review of Neuroscience and Founding President of the International Neuroethics Society. He is a member of the Institute of Medicine of the US National Academies of Science, where he serves on the Council and on the board of health sciences policy. He is a Fellow of the American Academy of Arts and Sciences, a Fellow of the American College of Neuropsychopharmacology, and a Distinguished Life Fellow of the American Psychiatric Association. He has received awards for public service from the United States Government and from patient advocacy groups including the National Alliance for the Mentally Ill.

Dr. Hyman received his BA from Yale College in 1974 summa cum laude, and an MA from the University of Cambridge, which he attended as a Mellon fellow studying the history and philosophy of science. He earned his MD from Harvard Medical School in 1980 cum laude.



Dr. Henry Brem M.D.*Johns Hopkins University School of Medicine*

Henry Brem has developed new tools and techniques that have changed the field of neurosurgery. Brem carried out the pivotal clinical study that introduced navigational imaging into the neurosurgical suite. His work led to the FDA's approval of the first image guidance computer system for intraoperative localization of tumors. Furthermore, he has changed the surgical armamentarium against brain tumors by inventing and developing Gliadel® wafers to intraoperatively deliver chemotherapy to brain tumors. His work has shown that surgeons can deliver potent therapies directly at the tumor site.



Henry Brem is the Harvey Cushing Professor of Neurosurgery, Oncology, Biomedical Engineering, and Ophthalmology; Chairman of Neurosurgery at Johns Hopkins, and Chief of Neurosurgery. He received his undergraduate degree from New York University, his medical degree from Harvard, and trained in neurosurgery at Columbia. He has built one of the largest brain tumor research and treatment centers in the world. He reinstituted the Hunterian Neurosurgery Laboratory (originally founded by Cushing) and has trained numerous researchers in brain research, in particular regarding intraoperative imaging, angiogenesis, immunotherapy, stem cell therapy, and targeted brain therapy. Since 2000 he has led the number one ranked Johns Hopkins Neurosurgery Department with a wide range of research, clinical, and teaching innovations. Brem's teaching was recognized by the Hopkins Professors Award for Excellence in Teaching in 1996. In 1998 he was elected to the Institute of Medicine of the National Academy of Sciences. In 2000 he was awarded the Grass Award by the Society of Neurological Surgeons for meritorious research. He has been the recipient of two Binational grants with colleagues in Ben Gurion University and Hebrew University. Brem helped establish the Johns Hopkins-Technion Alliance, and is on the Board of the Maryland Technion Society, and the Maryland Israel Development Corporation. Under Henry Brem's leadership, U.S. News and World Report named Johns Hopkins Hospital as having the top ranked Neurosurgery and Neurology Departments for 2010-2012. His trainees are leading brain tumor centers and neurosurgery departments throughout the world.

Mr. Bill Doyle*Executive Chairman,
NovoCure Ltd.*

Bill Doyle has dedicated his career to bringing breakthrough medical technologies to doctors and patients. Bill is the Executive Chairman of NovoCure, a company commercializing a new therapeutic modality for solid tumors using low intensity electric fields. Recently, NovoCure received FDA approval for its first indication, recurrent Glioblastoma Multiforme (GBM), the most virulent form of brain cancer. Bill is now focused on making NovoCure's unprecedented therapy available to GBM patients worldwide and conducting additional clinical trials to establish NovoCure broadly in the solid tumor therapy armamentarium.



In 2002, Bill co-founded medical device venture firm WFD Ventures and serves as its managing partner. WFD Ventures provides financing and business building expertise to medical device companies with the potential to make a major impact on patient care. The principals of WFD have extensive experience commercializing medical technologies and work with entrepreneurs, doctors and scientists to improve medical outcomes and maximize the potentials of their innovations.

Previously, as an executive of Johnson & Johnson, Bill was a member of J&J's Medical Devices and Diagnostics Group Operating Committee with responsibility for licensing, acquisitions & strategy. During his tenure, J&J added several important franchises, including DePuy Orthopedics, Cordis and BioSense-Webster. Bill was also Chairman of J&J's Medical Devices Research and Development Council, Worldwide President of Biosense-Webster, and a member of the boards of directors of Cordis Corporation and Johnson & Johnson Development Corporation (J&J's venture capital subsidiary).

Bill is a graduate of MIT and Harvard Business School. He serves as a member of the Dean's Advisory Board of Harvard Business School; Harvard Business School's Healthcare Advisory Board; and the MIT Corporation's Visiting Committee for Undergraduate Education.

Dr. Thomas Foo

Chief Scientist, Diagnostic and Biomedical Technologies, GE Global Research

Education:

Ph.D., Medical Physics (1990) – University of Wisconsin-Madison

B.A., Physics and Mathematics (1984) – Kenyon College, Gambier, OH



Thomas Foo is a Chief Scientist in the Diagnostics and Biomedical Imaging Technologies group at GE Global Research, a position he has held since January 2011. In addition to guiding the technology development in magnetic resonance imaging, he is also responsible for expanding external academic collaborations across multiple imaging modalities. Presently, he leads an NIH-supported program to develop a novel high-performance brain-only 3T MRI scanner in partnership with the Mayo Clinic. In his previous role as the MR Laboratory Manager at GE Global Research, he championed the development of innovative technologies including the first 128-channel RF receiver system, new RF coil concepts, faster image reconstruction techniques, and advanced image analysis algorithms.

Prior to joining GE Global Research in 2005, he was the Chief Scientist/Manager of the Applied Science Laboratory-East, GE Healthcare. This group was responsible for scientific collaborations and product development with sites such as the NIH, Johns Hopkins University, the Harvard University Hospitals, and Duke University. His research interests are in the areas of cardiac and vascular MR imaging, fast imaging applications, and advanced neurological imaging. Since joining GE in 1989 as a Senior Scientist, he developed new techniques in fast gradient-recalled echo imaging, contrast-enhanced MR angiography, coronary artery imaging, and the assessment of myocardial infarction. He also led the technical team responsible for developing GE Healthcare's cardiac MRI product. In 2012, he was recognized as a Fellow of the International Society of Magnetic Resonance in Medicine (ISMRM) for his contributions to MRI. He was also awarded the GE Coolidge Fellowship in 2011, the highest technical award for achievement at GE Global Research. He currently holds 57 issued U.S. patents and has authored or co-authored 97 book-chapters and peer-reviewed journal papers.

Dr. Alan I. Leshner

Chief Executive Officer, American Association for the Advancement of Science & Executive Publisher, Science

Dr. Leshner has been Chief Executive Officer of the American Association for the Advancement of Science and Executive Publisher of the journal *Science* since December 2001. AAAS (triple A-S) was founded in 1848 and is the world's largest, multi-disciplinary scientific and engineering society.



Before coming to AAAS, Dr. Leshner was Director of the National Institute on Drug Abuse (NIDA) from 1994-2001. One of the scientific institutes of the U.S. National Institutes of Health, NIDA supports over 85% of the world's research on the health aspects of drug abuse and addiction.

Before becoming Director of NIDA, Dr. Leshner had been the Deputy Director and Acting Director of the National Institute of Mental Health. He went to NIMH from the National Science Foundation (NSF), where he held a variety of senior positions, focusing on basic research in the biological, behavioral and social sciences, science policy and science education.

Dr. Leshner went to NSF after 10 years at Bucknell University, where he was Professor of Psychology. He has also held long-term appointments at the Postgraduate Medical School in Budapest, Hungary; at the Wisconsin Regional Primate Research Center; and as a Fulbright Scholar at the Weizmann Institute of Science in Israel. Dr. Leshner is the author of a textbook on the relationship between hormones and behavior, and has published over 150 papers for both the scientific and lay communities on the biology of behavior, science and technology policy, science education, and public engagement with science.

Dr. Leshner received an undergraduate degree in psychology from Franklin and Marshall College, and M.S. and Ph.D. degrees in physiological psychology from Rutgers University. He also has been awarded six honorary Doctor of Science degrees. Dr. Leshner is an elected fellow of AAAS, the National Academy of Public Administration, the American Academy of Arts and Sciences, and many other professional societies. He is a member of the Institute of Medicine of the National Academies of Science and Vice-Chair of its governing Council. He was appointed to the National Science Board by President Bush in 2004 and reappointed by President Obama in 2011.

Dr. Jacobo Mintzer, M.D., MBA

Medical University of South Carolina

Dr. Mintzer currently is a Professor of Neuroscience and Psychiatry and is the Vice-Chair of Clinical Research for the Department of Neurosciences at the Medical University of South Carolina. Dr. Mintzer was born in Argentina in 1955. He completed seven years of rabbinical studies in the Latin American Rabbinical Seminary (Conservative Judaism). Dr. Mintzer completed his medical school at the University of Buenos Aires, Argentina. He did his residency in psychiatry at Hadassah Hospital at the Hebrew University in Jerusalem. In addition to his residency while at the Hebrew University, he continued his research on regulation of microtubules activity in Alzheimer's disease. He continued this research while completing his fellowship in Geriatric Psychiatry at the University of California, Los Angeles. Dr. Mintzer initiated his academic career at the University of Miami, where he developed the Geriatric Psychiatry Fellowship Program and started his career as a clinical researcher in Alzheimer's disease. He joined the Medical University of South Carolina (MUSC) as an associate professor in 1991. At MUSC, he developed the Geriatric Psychiatry program which includes inpatient, outpatient, and consultation services as well as a fellowship program.

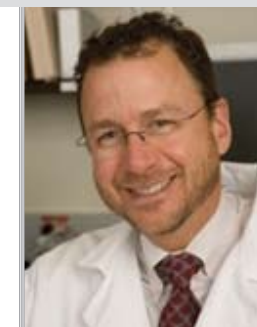
Dr. Mintzer's main activities involve facilitating the process of translating new discoveries in the basic sciences to apply technology to improve care for patients suffering from brain diseases. His personal research focus is in the development of new treatment for Alzheimer's disease. In that capacity, Dr. Mintzer has designed and conducted more than 150 clinical trials, more than half of them supported by the National Institute on Aging through the RO1 mechanism or the Alzheimer's Disease Cooperative Study group. Dr. Mintzer is currently participating in a consortium conducting the first gene therapy clinical trial for the treatment of Alzheimer's disease.



Dr. Mintzer holds a Master of Business Administration which he completed in 2009 at the Citadel Military College in South Carolina. He is the founder of BioPharma Connex, a private company based in Charleston whose mission is to bring cutting-edge technology to Latin America. This company has already developed ongoing relationships with Israeli biotechnology companies and is exploring the marketing of three different compounds in Latin America. Dr. Mintzer is the current president of the International Psychogeriatric Association (IPA). This association currently has 1500 members in 60 countries and 20 affiliate national societies including the Israel Association Old-Age Psychiatry. The IPA functions as a "think tank" dealing with issues related to mental health and neurodegenerative disorders affecting the aging population.

Mr. Ronen Gadot*CEO, EIMindA*

In 2006, Ronen joined the EIMindA founders and was the first investor and board member of EIMindA. Before joining EIMindA, Ronen held several key executive positions for major international companies, including SHL Telemedicine, Philips Electronics, and Applied Materials. At SHL Telemedicine Ronen served as the CEO of the European subsidiary of SHL, and Executive Vice President of the SHL group. While at Philips Electronics, Ronen served as Director of Business Development & Venturing and was part of the founding team of the Philips Corporate Venture Capital arm. Ronen initiated the Venture Fund activity in Israel leading numerous investments, commercial agreements and board memberships in entrepreneurial companies. During his tenure, Philips became one of the most active corporate investors in Israel. Ronen began his civil career working in Silicon Valley for Applied Materials, where he held several managerial positions. This followed an eight-year Air Force career. Ronen holds a BSc in Industrial Engineering and an MBA from INSEAD in Fontainebleau, France.

Dr. Jeffrey S. Nye, MD, Ph.D
*Vice President and Global Head,
Neuroscience External Innovation,
Janssen Pharmaceutical Companies of
Johnson & Johnson*


Dr. Nye is responsible for the strategy and implementation of external R&D in the neurosciences, aiming to expand the pipeline with novel business relationships, venture, academic and public-private partnerships and risk-shared outsourcing. Previously, Jeff was Chief Medical Officer and head of Early Development for the East Coast Research and Early Development unit at J&J. Prior roles include head of compound development for Galantamine (Razadyne/Reminyl), a therapy for Alzheimer's disease, and Topamax, an epilepsy and migraine medicine. He previously served as head of CNS Genomics at Pharmacia where he inaugurated the Gamma Secretase modulator program and co-led the Pharmacia/Exelixis team that discovered components of the gamma secretase.

Prior to joining the pharmaceutical industry, Jeff was a tenured associate professor of Molecular Pharmacology, Biological Chemistry and Pediatrics (Neurology) at Northwestern University and Children's Memorial Hospital studying development signal transduction and genetics. He received his bachelor's degree in biochemistry and master's degree in pharmacology from Harvard, and his MD and PhD (with Solomon Snyder) from the Johns Hopkins University School of Medicine. He served as a resident, postdoctoral fellow (with Richard Axel) and assistant professor at the College of Physicians and Surgeons of Columbia University.

Mr. Eyal Zadicario

*VP, Research and Development
Director, Neuro Programs, InSightec*

Eyal Zadicario holds the position of VP Research & Development in InSightec and is directing its Neuro Program activities. InSightec is the world leader in developing a novel technology for non-invasive treatments using ultrasound for neurosurgery and other body applications. Eyal has been with InSightec since 1999, the year it was founded, and since then has held various positions in the company's Research and Development group.

Eyal has a background in Aeronautical engineering, computer science and software engineering technologies. Eyal graduated from the Technion, Israel Institute of Technology in Aeronautical Engineering (Cum Laude) and completed his MSc (Summa Cum Laude) in computer science from the Tel Aviv University School of Mathematics.

His first position was the team leader responsible for the design and development of the GUI of the ExAblate systems. Later he was appointed as the company's Chief Software Architect. Since 2001, Eyal has led the Brain program at InSightec and has since been the product manager for the ExAblate Neuro. Before joining InSightec, Eyal spent 9 years in the Israeli Air Force Research and Development headquarters as a Systems Engineer and Project Manager for large scale army related aviation development projects. Eyal was recognized for his achievements and was awarded the Israel Prime Minister prize for technology and innovation.

**Dr. Vincent R. Zurawski, Jr.**

Founder, Varinel, Inc.

Dr. Vincent R. Zurawski, Jr., a pioneer in the biotechnology industry, is founder, past Chief Executive, and currently Chairman and Chief Scientific Officer of Varinel, Inc., a development stage pharmaceutical company focusing on therapeutic products aimed at treatment of: (1) disorders of the nervous system, with a particular focus on neurodegenerative disorders, including Parkinson's and Alzheimer's disease, (2) age-related macular degeneration ("AMD"), and (3) bacterial infections with a focus on wound healing. Dr. Zurawski was also recently a co-founder, past Chief Executive, Chairman of the Board of Directors, and Acting Vice President of Product Development of Avraham Pharmaceuticals Ltd., an Israeli company focusing on development of the multifunctional drug, ladostigil, which has entered proof-of-concept clinical trials for treatment of both Alzheimer's disease and mild cognitive impairment (MCI), a condition often seen as a precursor to the development of Alzheimer's disease.

Early in his business career, Dr. Zurawski was co-founder of Centocor, Inc., a major biotechnology company that was sold to Johnson & Johnson in a multi-billion dollar transaction. He served in various senior management capacities at Centocor, played a major role in developing and implementing the successful business strategy of the Company, and was directly responsible for development of all of the company's cancer diagnostic products, including three products that still dominate various market segments in the industry: CA19-9, CA125 and CA15-3. Dr. Zurawski also held a faculty position at Harvard Medical School during his tenure at Centocor.

Dr. Zurawski has testified before the U.S. Congress on behalf of the biotechnology industry. He was a member of the Board of Directors of the Pennsylvania Biotechnology Association, and a member of the Working Group on Biomedical Research of the Joint State Government Commission of the General Assembly of the Commonwealth of Pennsylvania, where he was a principal architect of many of the Working Group's recommendations to the Pennsylvania legislature.

Dr. Zurawski has authored or co-authored more than 90 research publications. He has also presented invited lectures nationally and internationally on both business and research topics. Dr. Zurawski earned his Ph.D. from Purdue University in 1973 and completed post-doctoral training at the Massachusetts General Hospital and Harvard Medical School. He was elected a Distinguished Graduate of the Purdue Chemistry Department in 2005, and he has served on the Advisory Committee to the Chemistry Department at Purdue.

Ms. Susan W. Berson

*Health Law,
Mintz Levin*

Susan is Managing Member of the firm's Washington, D.C. office and a member of the firm's Health Law Section.

Susan focuses on advising private and public health care service providers, including managed care organizations, pharmaceutical services providers such as PBMs, behavioral health companies, specialty care companies, and integrated delivery systems, often in the context of strategic affiliations and complex service agreements. Susan has advised some of the nation's largest government health programs and has negotiated some of the nation's largest pharmacy service agreements, and also advises on complex mergers, acquisitions, joint ventures, and network development programs. She also has significant experience assisting venture capital groups and investment banks with investments in the health care industry.

Susan returned to Mintz Levin in 2008 after a two-year hiatus, during which she served as general counsel of the Public and Senior Markets Group at UnitedHealth Group, a Fortune 20 company and one of the nation's leading managed care organizations. In this role, she was responsible for the legal and regulatory oversight of UnitedHealth's government programs (including Medicare and Medicaid) and was also the chief legal counsel for all pharmacy services.

**Mr. Zack Lynch**

*Executive Director, Neurotechnology
Industry Organization*

Zack Lynch is the founder and executive director of the Neurotechnology Industry Organization, a global trade association representing companies involved in neuroscience, brain research institutes and patient advocacy groups. Founded in 2006, NIO now has more than 100 member organizations all focused on accelerating the development of treatments for neurological diseases, psychiatric illnesses and nervous system injuries. He spearheaded annual meetings in Washington DC to advance their agenda on Capitol Hill including galvanizing support for the National Neurotechnology Initiative, a \$1B piece of legislation aimed at accelerating translational neuroscience which Zack wrote with NIO members. He is the author of *The Neuro Revolution: How Brain Science Is Changing our World* published by St. Martin's Press in the U.S., Japan, Korea, China and Brazil throughout 2010-11.

Previously, he co-founded NeuroInsights, a market research and investment advisory firm that advises global organizations on the impact of neurotechnology on business, government and society. NeuroInsights hosts an annual Neurotech Investing and Partnering Conference each May. He was the publisher of the investment newsletter, Neurotech Insights and co-author of NeuroInsights 500-page annual investment analysis of the global neurotech industry. He also developed the NASDAQ NeuroInsights Neurotech Index, a stock tracking index for neuroscience companies. Zack Lynch is the founder and CEO of HealthRally, a neurosoftware company focused on wellness motivation. He has also been an executive and founder of several software companies in profit optimization, knowledge management and collaborative forecasting. Mr. Lynch speaks frequently and is quoted widely in the press including: Forbes, XConomy, O the Oprah Magazine, San Francisco Chronicle, Washington Times, Scientific American, Science, Slate and many more.

Mr. Lynch serves on the advisory boards of the McGovern Institute for Brain Research at MIT, Center for Neuroeconomic Studies at Claremont Graduate University, the Institute for Global Futures and the wiki software company, Socialtext. He has a B.S. in Evolutionary Biology, B.S. in Environmental Science and M.A. in Economic Geography, all from UCLA.





Israel - U.S. Binational Industrial Research and Development Foundation

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

BIRD Partnerships

Any pair of companies, one Israeli and 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-scale proposal. The BIRD Foundation Board of Governors approves these proposals twice a year. Approvals are 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.

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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. The foundation does not interfere in formulating or managing the relationship between the partnering companies.

BIRD's Track Record

BIRD's scope extends to Communications, Cleantech, Electronics, Internet & Media, Homeland Security, Life Sciences, Semiconductors, Software and other areas of innovative technology with commercial potential. The cumulative sales of products developed through BIRD projects have exceeded \$8 billion. Since BIRD's inception in 1977, over 800 projects have been approved with leading companies in the United States, including:

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

Please refer to our website www.birdf.com for additional information.

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United States – Israel
Binational Science Foundation

The U.S. - Israel Binational Science Foundation (BSF)

The establishment of the U.S. - Israel Binational Science Foundation (BSF) originated as a result of the close ties in scientific and technological cooperation which had developed over many years between the United States and Israel. Both governments recognized the importance of science and technology in the development of a strong and vigorous national economy, and that international cooperation in science and technology would contribute to the advancement of these fields for the benefit of both countries, as well as mankind generally. An agreement to establish the United States - Israel Binational Science Foundation (BSF) was signed in September 1972. A Board consisting of ten members, five from the United States and five from Israel, appointed by the respective governments, governs BSF's operations. The BSF conducts its operations from Jerusalem.

The BSF mostly awards research grants, always on a competitive basis, for collaborative projects between Israeli and American scientists. The supported areas of research include: health and life sciences, exact and physical sciences, and social sciences. Due to lack of funds, submission of grant applications is accepted on a split program basis, namely: in alternate years either health, and life sciences or exact, physical and social sciences applications are submitted. Other programs include short, research related visits to the other country by PhD students, and workshops. We also have begun a program in "Transformative Science" that looks for somewhat esoteric projects with a "transformative" potential that do not fair well in regular competitions. Starting in 2012, the BSF is engaging in what appears to be an unprecedented number of new joint funding programs with the NSF.

The scientific merit of each research proposal is determined through a peer review process. Proposals are sent for review to referees in the U.S., Israel, Europe, etc. and over 2000 reviews are collected each year for about 500 applications. Final evaluation of proposals is rendered by panels of science advisors that include both Israelis and Americans. Among the scientists who have participated in BSF supported projects are 37 Nobel Laureates, including 5 Israelis, indicating the high quality of the research supported by the BSF. Since its inception, the BSF has supported close to 5000 joint research projects totaling more than \$500 M.

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About the U.S.-Israel Science & Technology Foundation:

The U.S.-Israel Science & Technology Foundation (USISTF) is a Washington, DC based 501c3 non-profit organization founded by a joint initiative of the U.S. Department of Commerce and the Israel Ministry of Industry, Trade and Labor with a mission of strengthening the scientific and R&D relationship of the U.S. and Israel to promote economic growth through innovation. USISTF achieves its mission by convening U.S. - Israel scientific and industry conferences, producing strategy and policy data and publications and facilitating R&D framework programs that enable joint research activities.

U.S.-Israel Science & Technology Foundation Programs:

Through its programs, the USISTF strengthens the scientific alliances between the academic, industry and policy communities of the United States and Israel that work in emerging areas of technology creating the solutions of tomorrow for the world's most pressing challenges.

USISTF convenes scientific and industry conferences and workshops that bring together scientific and thought leaders to analyze the state of play in their fields, to generate actionable visions of technology development and to enable working partnerships to develop next generation technologies. USISTF considers these events only the beginning of developing action plans to spark concrete collaborations and always takes the lead in undertaking action plans that lead to true joint programs.

The USISTF not only brings scientific and technology leaders from the U.S. and Israel together to address global challenges, but it also produces the only benchmarking publication that analyzes the state of the U.S. - Israel innovation

relationship against that of the U.S. and eight other countries in order to monitor areas of strength and develop policy ideas to address areas of weakness. The "U.S. - Israel Innovation Index" utilizes quantitative and qualitative metrics in the areas of R&D, human capital, government and private sector cooperation to paint a full picture of the state of the U.S. - Israel innovation relationship.

USISTF works with diverse organization strategic partners such as U.S. - Israel Bi-national Foundations in a broad range of scientific disciplines. And looking to the future, the USISTF continues to broaden its scope of technology areas to spark game changing U.S. - Israel cooperative activities.

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Our attorneys have a strong commitment to the innovation economy. Since the birth of the life sciences industry in the 1970s, we have provided experience, resources, and insight to help clients in the industry meet their goals. We advise companies of every size, from start-ups looking for their first funding to public companies with products on the market, as well as venture capital firms, investment banks, and research and academic institutions. Not a day goes by when we aren't advising clients about what to watch out for and where to tap new opportunities.

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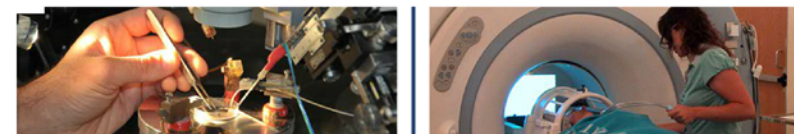
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The National Institute for Psychobiology in Israel (NIPI) is dedicated to advancing basic and applied investigation into degenerative, behavioral and development disorders of the nervous system by supporting cutting-edge brain research in Israel.

NIPI is the only philanthropic funding initiative offering assistance to all Israeli universities, research institutes and major hospitals, providing grant opportunities and fellowships, funding establishment of new laboratories and core research centers, purchasing state-of-the-art equipment, and convening academic conferences.

Since 1971, NIPI has been a key factor in transforming Israeli psychobiology into a dynamic and vibrant scientific community of over 1,000 expert researchers and clinicians. NIPI continues to be a central player in funding brain research, leading the fight against diseases of the brain, and in combating emigration of Israeli scientists.



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The Neurotechnology Industry Organization

The Neurotechnology Industry Organization (NIO) is the trade association that represents companies involved in neuroscience (drugs, devices, diagnostics), brain research institutes and patient advocacy groups across the United States and throughout the world. Founded in 2006, NIO has over 100 member organizations who have joined together to provide a unified voice for the commercial neuroscience community. NIO advocates for our members on a range of issues related to neurotechnology research and business development including favorable changes in the tax code, intellectual property issues, neuroethics, investor relations, public policy, reimbursement and patient advocacy. More information can be found at www.neurotechindustry.org.

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