The Hebrew University of Jerusalem
The Authority for Research and Development
https://research.huji.ac.il
Tel: +972-2-658-6625/6/8; Fax: +972-2-561-8196

June 2017

The Authority for Research and Development
The Hebrew University of Jerusalem

Project coordinator: Ayelet Sagiv
Project text editor: Channa Coggan
http://www.facebook.com/JanisDesign

THE KAYE INNOVATION AWARDS

AT THE HEBREW UNIVERSITY OF JERUSALEM

2017 תשע"ז

THE HEBREW
UNIVERSITY
OF JERUSALEM

ISAAC KAYE

Isaac Kaye is a pharmaceutical chemist who has been very successful at translating novel ideas into profit-generating products. He established Norton Healthcare, a substantial generic pharmaceutical company in the UK, which later merged with the IVAX Corporation of the USA. Teva, Israel's biggest company, completed its acquisition of IVAX in 2006, creating the world's largest generics company.

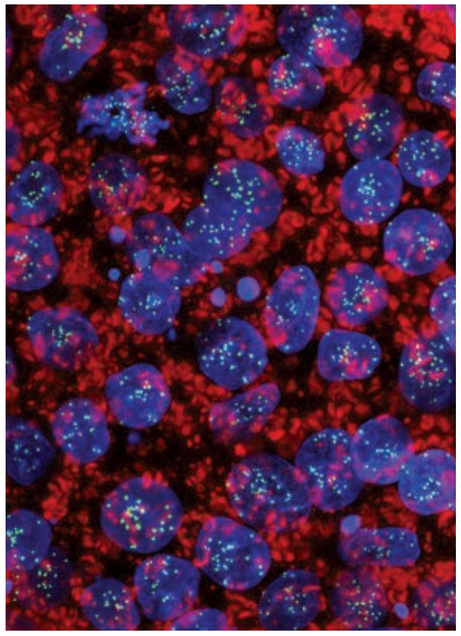
After retiring from IVAX, he turned his attention to venture capital and together with partners founded Israel Healthcare Ventures (IHCV), a provider of capital to early and expansion stage Israeli companies. IHCV focuses exclusively on healthcare and life sciences.

Isaac Kaye's passion for medical innovations that advance human healthcare is matched by a number of other interests, including his love of Israel and its people and his enthusiasm and support for The Hebrew University of Jerusalem and the principles upon which it is based. Fortunately for The Hebrew University, Isaac Kaye's interests in pharmacology, new chemical entities and medical devices are very much in line with areas in which the University has considerable expertise and which it is eager to develop.

In 1995, the Isaac and Myrna Kaye Chair in Immunopharmacology at the School of Pharmacy was established, providing much needed research funds in this field. In 2005, he established five annual fellowships for outstanding graduate and post-doctoral students. "The Kaye-Einstein Fellowships" encourage recipients to continue their studies at The Hebrew University for a minimum of three years, helping to prevent the University's finest scholars from being recruited by other leading institutions. Subsequent to the first program of scholarships, five additional three-year scholarships were awarded in 2010, and another five in 2013 to outstanding students as "Kaye-Einstein Scholarships." Yet another five commenced in 2016.

Isaac Kaye established the annual Kaye Innovation Awards in 1993. The awards have earned an esteemed reputation highlighting innovations with potential for income generation, principally through royalties for the University. Applications must be well focused and accompanied by recommendations but unlike grant proposals anyone from the most senior to the most junior staff may apply. Students are always encouraged to submit proposals. The winners demonstrate not only good science but also a focus on commercial viability and the benefits this brings to the University.

Isaac Kaye has always been active on behalf of The Hebrew University. He served as Chairman of the South African Friends organization and became an active member of the University's Board of Governors. Following his move to the UK, Isaac Kaye joined the British Friends and continued as a member of the Board of Governors of The Hebrew University. He is currently Chairman of the British Friends. Our University is deeply indebted to both Isaac and Myrna for their deep involvement and devotion to this institution.



Yissum
Technology Transfer Company
of the Hebrew University

For the past 23 years, Yissum has been taking part in the selection process of Hebrew University faculty and students for the prestigious Kaye Awards. These annual awards are given to those inventors whose work best exemplifies the synergy of scientific excellence and commercial potential.

Yissum enjoys a prominent place among the world's leading technology transfer companies, with over two billion dollars in annual sales worldwide of products originating at The Hebrew University and licensed by Yissum. Since its inception in 1964, Yissum has registered over 9,825 patents, covering more than 2,750 inventions. Over 880 of these inventions have been licensed and 120 have formed the basis for the establishment of start-up companies. Many of the researchers behind these products and technologies have been recognised by the receipt of the Kaye Award.

This year's first prize is awarded to Prof. Yuval Dor and to Dr. Ruth Shemer of the Institute for Medical Research-Israel Canada (IMRIC) in the Faculty of Medicine, for their invention: "Non-Invasive Detection of Tissue Damage". This is a novel platform technology for minimally-invasive (blood test) monitoring of cell death of specific tissues with features that may strongly impact diagnostic medicine in a very broad way. In a series of experiments involving hundreds of patients and control subjects, the researchers showed how a blood test they developed can detect multiple pathologies, including; diabetes, cancer, cardio, autoimmune and neurodegenerative diseases. In 2017, Yissum formed OnTimeBio, a development and marketing company of novel diagnostic solutions that will allow timely detection and monitoring of disease, with the aim of reducing patient suffering as well as the costs of medical treatment.

The second prize this year is awarded to Prof. Berta Levavi-Sivan of the Faculty of Agriculture for her research: "Growth and Reproduction Aid in Aquaculture".

Today, Aquaculture production is rapidly expanding as marine sources are being depleted and fish consumption increases. With feed comprising 30%- 50% of growers' operating expenses, the goal of reaching maximum fish weight while reducing production costs is a key challenge. In 2015, Yissum founded AquiNovo to addresses this challenge by inhibiting fish reproduction, thus channeling the fish's energy to accelerate growth and reach market weight faster. The company is currently a portfolio company of the Trendlines incubator.

Prof. Amiram Goldblum of the Institute of Drug Research at the Faculty of Medicine will be receiving the Kaye Award for: "A Novel Generic Algorithm Applied for Discovering Highly Active Drug Candidates". This is a novel method for finding sets of best solutions to extremely complex combinatorial problems. The main applications in the Goldblum lab are to structural biology and drug discovery. The technology: "Iterative Stochastic Elimination" (ISE) is used to find optimal solutions to diverse issues such as molecular conformational ensembles, ligand docking to biomolecules, protein design, focused molecular libraries, cheminformatics and others.

On the basis of this technology a company, Pepticom,was founded in 2011 to revolutionize the discovery of novel peptide drug candidates. Pepticom's key asset is an exceptional artificial intelligence platform aimed at designing peptide ligands based upon solved crystal structures of proteins.

The prize is also awarded to two promising students: Mr. Ido Sagi for his research on: "Haploid Human Embryonic Stem Cells and Somatic Cells", and to Ms. Suaad Abd-Elhadi for her research on "Lipid's ELISA".

Yissum is proud to be actively involved in the successful commercialization of these and many other technologies. Our dedicated team is committed to bridging the intrinsic gap between academia and industry in order to bring the fruits of first-class academic research to society at large, and thus provide much-needed funding to support scientific research at the Hebrew University.

We are, as always, indebted to Mr. Kaye for his generosity and personal commitment to support The Hebrew University's researchers in their constant quest for innovation, and extend our sincere congratulations to this year's eminent prize-winners.

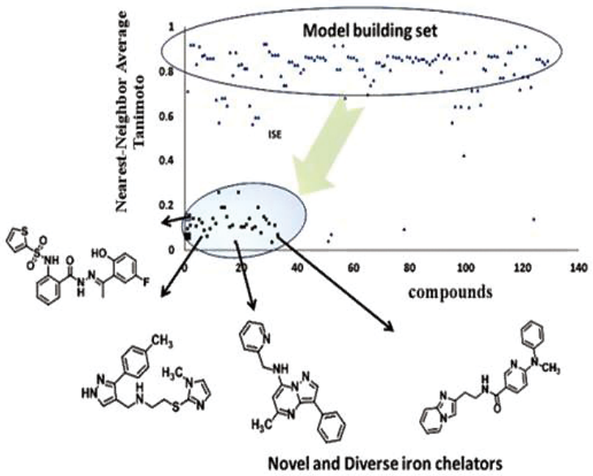
KAYE WINNERS 2017

Researchers - First Prize

PROF. YUVAL DOR **DR. RUTH SHEMER**

Department of Developmental Biology
and Cancer Research
Institute for Medical Research Israel-Canada
Hebrew University-Hadassah Medical School

Non-Invasive Detection of Tissue Damage



Novel and Diverse iron chelators

Researcher - Second Prize

PROF. BERTA LEVAVI-SIVAN

Department of Animal Science
Robert H. Smith Faculty of Agriculture, Food and Environment

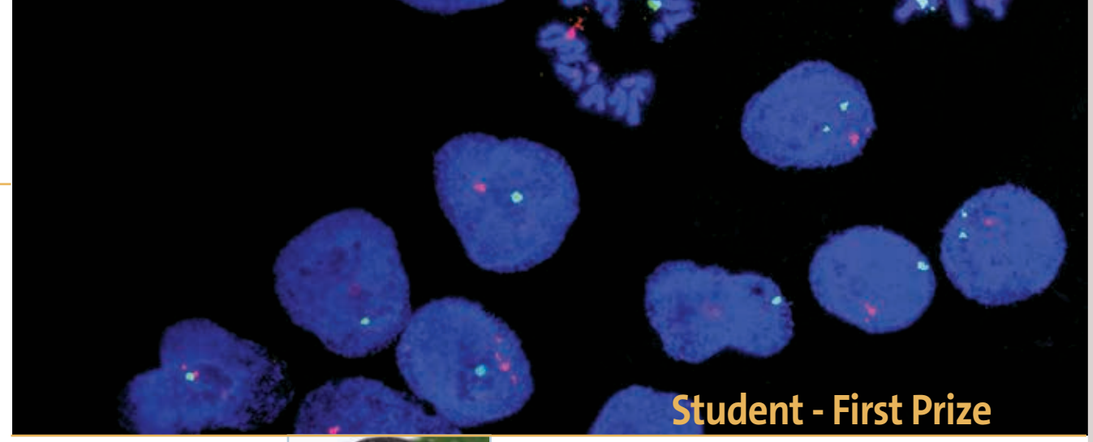
Growth and Reproduction in Aquaculture

Researcher -Third Prize

PROF. AMIRAM GOLDBLUM

Institute for Drug Research
School of Pharmacy
Faculty of Medicine

A Novel Generic Algorithm Applied for Discovering Highly Active Drug Candidates



Student - First Prize

MR. IDO SAGI

Department of Genetics
Alexander Silberman Institute for Life Sciences
Faculty of Science

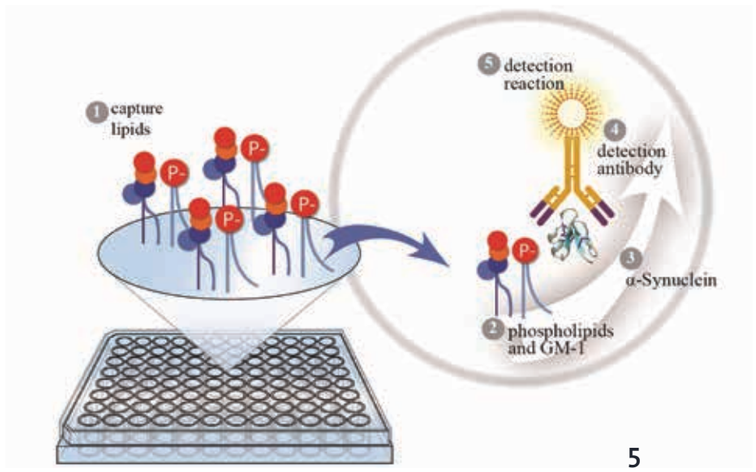
Haploid Human Embryonic Stem Cells and Somatic Cells

Student - Second Prize

MS. SUAAD ABD-ELHADI

Department of Biochemistry and Molecular Biology
Institute for Medical Research Israel-Canada
Hebrew University-Hadassah Medical School

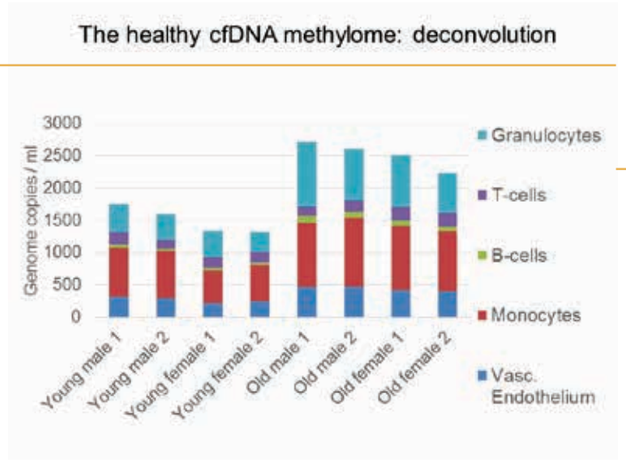
Lipid's ELISA: A Highly Sensitive Diagnostic Assay for Parkinson's Disease



Researchers - First Prize

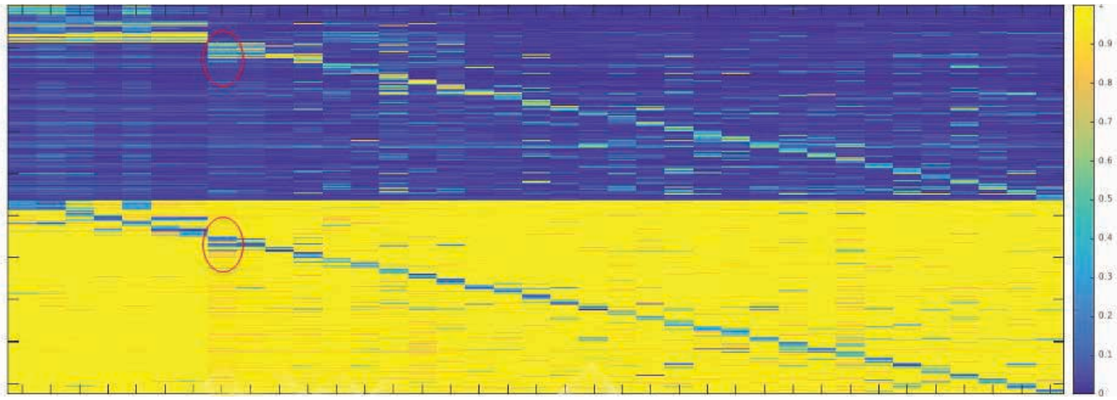
PROF. YUVAL DOR **DR. RUTH SHEMER**

Department of Developmental Biology
and Cancer Research
Institute for Medical Research Israel-Canada
Hebrew University-Hadassah Medical School



Prof. Yuval Dor *is a professor at the department of developmental biology and cancer research at The Hebrew University's Faculty of Medicine. He received his Ph.D. from The Hebrew University (1996-2001) and carried out his post-doctoral training at Harvard University (2001-2004). He studies tissue dynamics, in particular pancreatic beta-cell regeneration and failure in diabetes.*

Dr. Ruth Shemer *is a researcher at the department of developmental biology and cancer research at The Hebrew University's Faculty of Medicine. She received her Ph.D. from The Hebrew University (1987-1991) and undertook her post-doctoral training at City of Hope in Duarte, California (1991-1993). Her main field of study is DNA methylation, focusing on understanding the role of DNA methylation in controlling gene expression, both in genomic imprinting and in embryonic development. More recently, she has used the knowledge on DNA methylation to establish a novel technology for non-invasive assessment of cell death of specific human tissues.*



Non-Invasive Detection of Tissue Damage

Accurate detection of tissue damage is a challenging task that holds the key for many advances in medicine including early detection of disease, assessment of treatment efficacy, and more. We have developed a novel blood test for monitoring cell death in specific tissues, with features that may broadly affect diagnostic medicine. Two biological principles form the basis of this technology:

1) Dying cells release fragmented DNA into the circulatory system, where it travels for a short time.

2) Each cell type has a unique and stable epigenetic makeup, including a specific DNA methylation pattern.

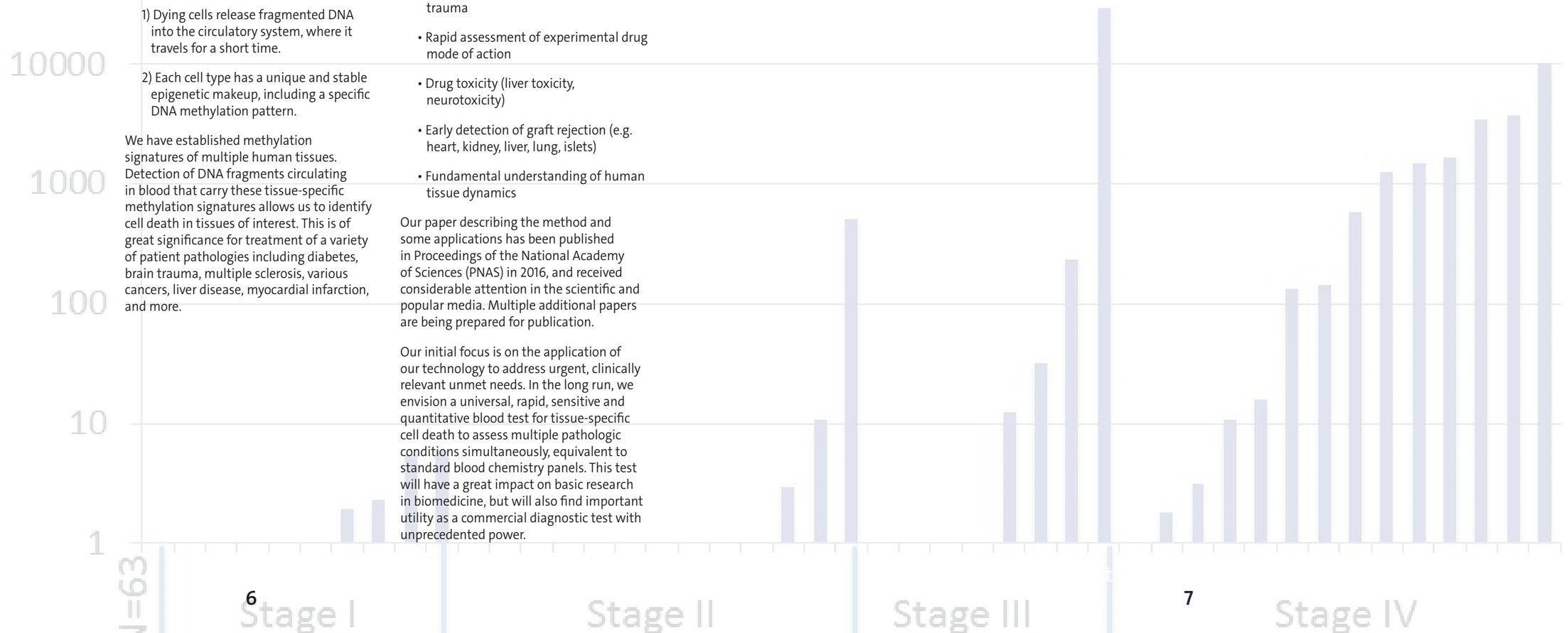
We have established methylation signatures of multiple human tissues. Detection of DNA fragments circulating in blood that carry these tissue-specific methylation signatures allows us to identify cell death in tissues of interest. This is of great significance for treatment of a variety of patient pathologies including diabetes, brain trauma, multiple sclerosis, various cancers, liver disease, myocardial infarction, and more.

Some applications of the method include:

- Early detection of pathologies e.g. cancer, cardiac failure, type 1 diabetes, diabetic complications
- Monitoring of response to therapy in cancer and degenerative diseases
- Evaluation of tissue damage e.g. after traumatic brain injury, stroke, multiple trauma
- Rapid assessment of experimental drug mode of action
- Drug toxicity (liver toxicity, neurotoxicity)
- Early detection of graft rejection (e.g. heart, kidney, liver, lung, islets)
- Fundamental understanding of human tissue dynamics

Our paper describing the method and some applications has been published in Proceedings of the National Academy of Sciences (PNAS) in 2016, and received considerable attention in the scientific and popular media. Multiple additional papers are being prepared for publication.

Our initial focus is on the application of our technology to address urgent, clinically relevant unmet needs. In the long run, we envision a universal, rapid, sensitive and quantitative blood test for tissue-specific cell death to assess multiple pathologic conditions simultaneously, equivalent to standard blood chemistry panels. This test will have a great impact on basic research in biomedicine, but will also find important utility as a commercial diagnostic test with unprecedented power.



Researcher - Second Prize

PROF. BERTA LEVAVI-SIVAN
Department of Animal Science
Robert H. Smith Faculty of Agriculture, Food and Environment

Born in Israel, Berta Levavi-Sivan earned her B.Sc. degree in life science, as well as her M.Sc. and Ph.D. in zoology from Tel Aviv University. She joined the Robert H. Smith Faculty of Agriculture, Food and Environment, of The Hebrew University in Jerusalem. Her work has focused on fish reproduction and growth with special emphasis to the hormonal axes. Levavi-Sivan is a specialist in aquaculture, she has worked extensively in Uganda to combat depleted fish supplies in Lake Victoria. Levavi-Sivan has published over 103 articles in refereed journals and has won several prizes on her findings.

Growth and Reproduction in Aquaculture

One of the future world's greatest challenges is how to feed more than nine billion people by 2050 in a context of climate change, economic and financial uncertainty, and growing competition for natural resources. Hence, meeting the ever-growing demand for fish—an important source of protein—from aquaculture (agriculture of the water) will be vital.

Several routes are used to improve and increase the yield in aquaculture:

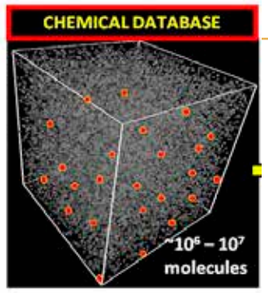
Growth Aid in Aquaculture: We recently found a novel neuropeptide that is secreted by the fish brain and is crucial for reproduction. These neuropeptides – namely Neurokinin B (NKB) and Neurokinin F (NKF) – can stimulate the release of gonadotropins. NKB is an important regulator of the hypothalamic-pituitary-gonadal axis and is the target of a range of regulators. We found NKBs in 20 different fish species, belonging to several different orders. The current invention is the development of NKB and NKF antagonists. These antagonist are included in the fish feed. They inhibit the reproduction of the fish thereby leading to advanced growth rates. We were awarded the Chamama grant from the Ministry of Commerce. Our research led to the foundation of a company called AquiNovo Ltd.

Reproduction Aid in Aquaculture: Reproduction is the basis of aquaculture production. A large number of aquaculture species do not reproduce readily under captive conditions and require the application of exogenous ligands (hormones) to induce final maturation of oocytes. Carps are the oldest and most important species in World Aquaculture. We have been producing two agents for the control of carp reproduction: The first is grounded on hormones that are secreted from the pituitary and is named "pathogen-free calibrated carp pituitary extract" (cCPE). The second agent is based on the hormones that are secreted from the fish brain. It contains a Gonadotropin Releasing Hormone analog and a dopamine antagonist, and is named "ZAGIN". All the carp produced in Israel, including ornamental species, are produced with either cCPE or ZAGIN. Both agents are commercially distributed by Kibbutz Gan-Shmuel and supervised by Yissum.

Researcher -Third Prize

PROF. AMIRAM GOLDBLUM
Institute for Drug Research
School of Pharmacy
Faculty of Medicine

Amiram Goldblum has a B.Sc. in chemistry and physics, a M.Sc. in quantum chemistry and a Ph.D. in organic chemistry. He undertook postdoctoral studies in quantum biochemistry (Paris and Stanford) and theoretical medicinal chemistry (Claremont, CA). Goldblum joined the School of Pharmacy's medicinal chemistry department, teaching and training in computational chemistry. Currently, he heads the molecular modeling and drug discovery lab. His co-invention, Iterative Stochastic Elimination (ISE) generic algorithm, received the ACS COMP division award in 2000. Goldblum has published twenty applications of ISE and three patents. Recent publications include: J. Control, Release 252: 18-27 (2017, cover story) and J. Chem. Inf. Model. 56: 1835-1846 (2016) and 56: 2476-2485 (2016).



A Novel Generic Algorithm Applied for Discovering Highly Active Drug Candidates

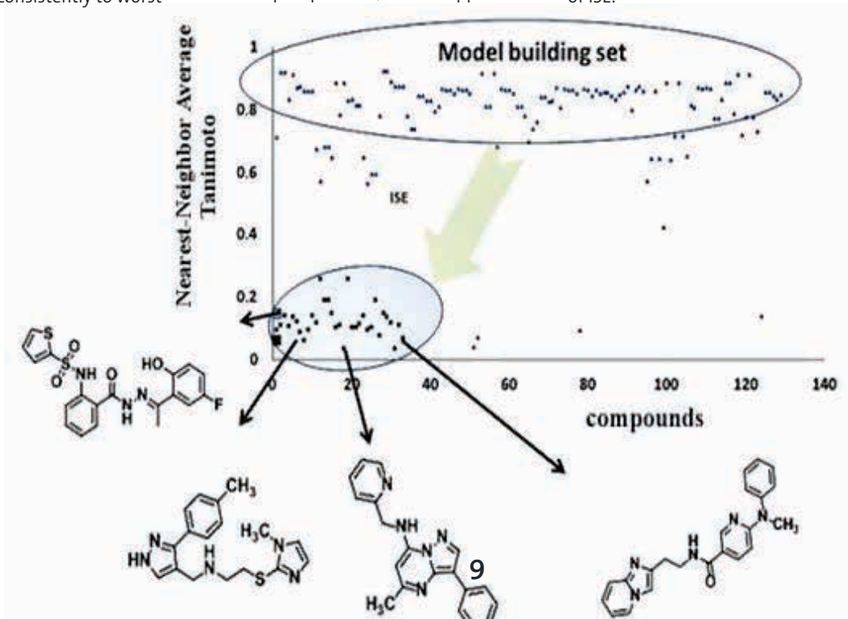
Many scientific problems are extremely complex due to dependence on an assortment of variables and variable values. They are defined as having extreme "combinatorial complexity". The huge number of possibilities cannot be examined in full due to computer and time limits. Some of the problems facing drug design and discovery are of such complexity, with 10 to the power of 100 and more, which cannot be solved by any combination of computers in our lifetime.

Our heuristic algorithm, called "Iterative Stochastic Elimination" (ISE) was developed to find good solutions for such problems in silico. ISE produces a huge sample of possibilities and evaluates each according to a scoring function. By examining the best and the worst outcomes, it is possible to eliminate the variables or variable values that contribute consistently to worst results. Elimination reduces the numbers of possibilities in further iterations, until the total number of combinations is less than a million. All remaining options are examined, scored and sorted. The top best results serve as our models.

Such models are extremely useful for drug discovery, because they are produced by finding the physic-chemical properties that distinguish between molecules that are active at a specific target and those that are not. A model that is constructed on the basis of a few dozens or hundreds of molecules serves to screen millions of molecules and to discover novel candidates. Those are purchased and sent to experimental labs. Most of the molecules have new scaffolds, were not described in the literature and are patentable.

ISE is a generic algorithm for ANY complex problem, and we applied it recently to discover bioactive molecules. All such projects ended with discovering active hits or leads or both. ISE was crucial for discovering highly active molecules for excessive immune response at Toll-like receptor 9, for enabling parenteral use of mupirocin , already tested in many bacterial challenges *in vitro* and *in vivo* (also gram negative bacteria), for discovering dual enzyme inhibitors (acetylcholinesterase and beta secretase) of the amyloid pathway in Alzheimer's disease and iron chelators for potential treatment of cancer. The top molecules in all those projects were patented. Our experimental collaborations are in Germany, Hungary, USA, Japan and Israel.

We are currently involved in a dozen projects of drug discovery. A company, pepticom (www.pepticom.com), for predicting bioactive peptide sequences, is based on the invention of ISE.



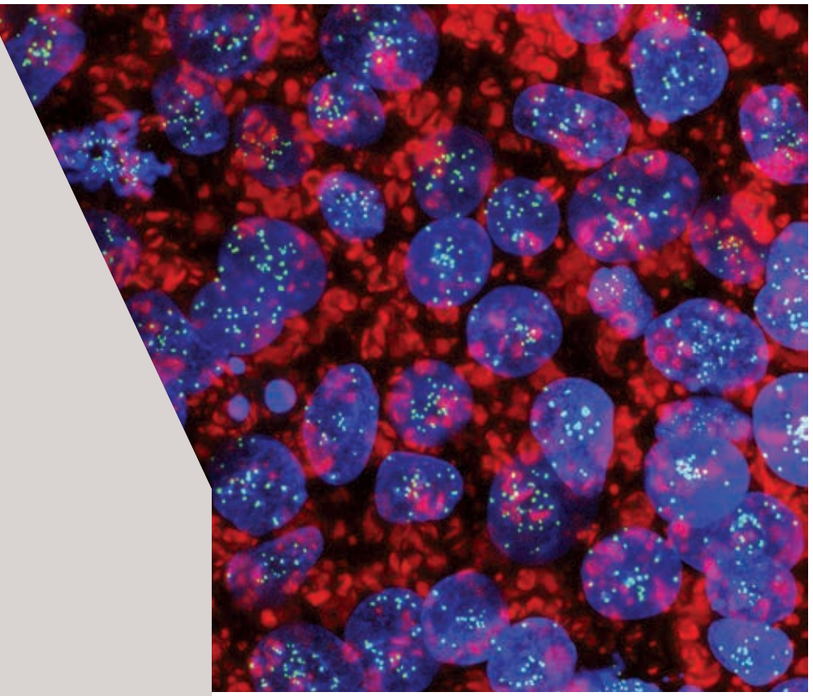
Student - First Prize

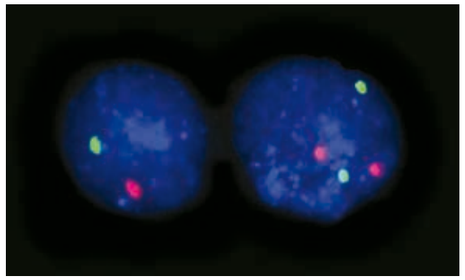
MR. IDO SAGI

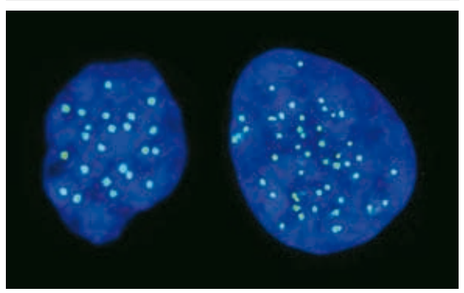
Department of Genetics
Alexander Silberman Institute for Life Sciences
Faculty of Science

Haploid Human Embryonic Stem Cells and Somatic Cells

Ido Sagi is a Ph.D. student at the laboratory of Prof. Nissim Benvenisty at The Hebrew University. He received a B.Sc. summa cum laude *from The Hebrew University in Amirim–Science and Etgar–Life Sciences honors programs. Currently, Sagi pursues a direct Ph.D. in Genetics. He is a fellow of the Adams Fellowship of the Israel Academy of Sciences and Humanities. His research has been published in leading journals, such as Nature, Nature Genetics, and Cell Stem Cell. He is co-inventor in a patent by Yissum and NYSCF entitled "Haploid human embryonic stem cells lines and somatic cell lines and methods of making the same".*







Most of the cells in our body are diploid, carrying two sets of chromosomes. Haploid cells, having a single set of chromosomes, occur only as reproductive cells, namely the egg and sperm. However, haploid cells hold a unique potential for genetic screening and for studying the role of ploidy in development and disease. Reproductive-cell manipulation has yielded haploid embryonic stem cells (ESCs) from several non-human species. Sagi analyzed a collection of human ESC lines originating from haploid eggs, leading to the first successful isolation and maintenance of haploid human ESCs.

Haploid human ESCs exhibit typical stem-cell characteristics. Although they resemble their diploid counterparts to a great extent, they also display distinct molecular properties, as well as reduction in absolute gene expression levels and cell size. Most surprisingly, whereas studies on mouse haploid ESCs showed that haploidy is lost upon differentiation, Sagi found that haploid human ESCs can also differentiate into haploid somatic cells, including into cells of the brain, heart and pancreas.

Haploid human ESCs and somatic cells lay the groundwork for novel biomedical applications, including in cancer research, reproductive and regenerative medicine and disease modeling. Their most prominent utility is for genetic screening, which is limited in diploid cells, where both gene copies must be targeted. As proof-of-principle, Sagi demonstrated that haploid human ESCs can facilitate genetic screening by analyzing a haploid mutant library for resistance to the toxic purine analog 6-thioguanine. Similar screens will be useful for studying resistance to chemotherapy drugs, with implications for cancer therapy. Screening may also be aimed at identifying genes necessary for pluripotency or differentiation, potentially leading to the improvement of protocols in regenerative medicine. Haploid human ESCs may also simplify the generation of haploid reproductive cells in culture, and their reduced immunological complexity may be useful for cell therapy.

The ability to mutate the haploid human genome and perform large-scale genetic screens will enhance our ability to study genotype-phenotype interactions in the context of human development and disease, and the haploid nature of these cells may be beneficial in clinical settings.

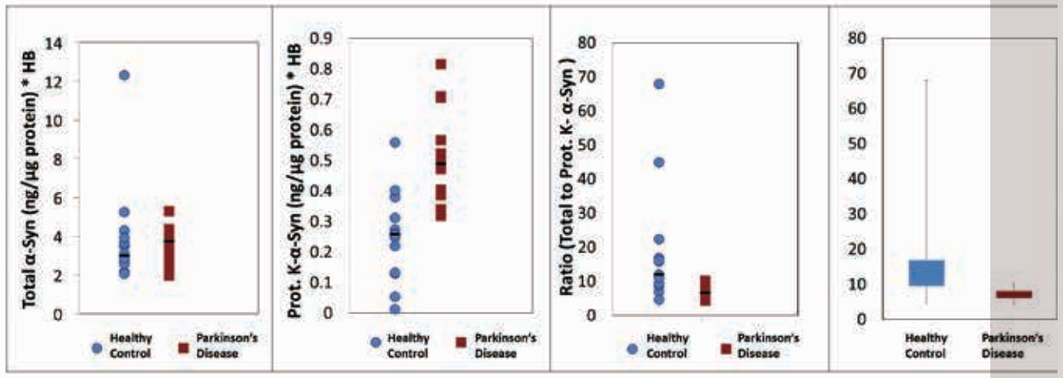
This work has been published in Nature.

Student - Second Prize

MS. SUAAD ABD-ELHADI

Department of Biochemistry and Molecular Biology
Institute for Medical Research Israel-Canada
Hebrew University-Hadassah Medical School

Suaad is a direct-track Ph.D. student at the Department of Biochemistry and Molecular Biology of the Institute for Medical Research Israel-Canada. She performs her research under the supervision of Dr. Ronit Sharon. She completed her B.Sc. in medical laboratory science at Hadassah Academic College. Suaad received a scholarship from the Liba and Manek Teich Endowment Fund for Doctoral Students and an Adrian Sucari scholarship for Academic Excellence. She has already published two papers (Abd El-Hadi et al., Sci. Rep 2015 and Abd El-Hadi et al., Anal. Bioanal Chem. 2016) describing her research.



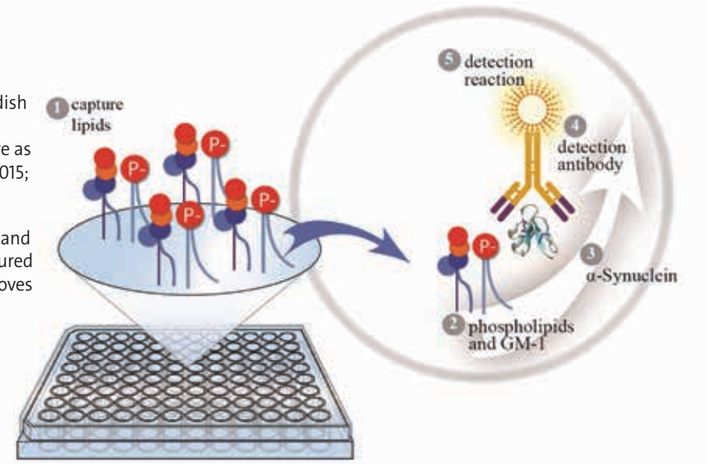
Lipid's ELISA: A Highly Sensitive Diagnostic Assay for Parkinson's Disease

Reliable biomarkers are critically needed for early and accurate diagnosis of Parkinson's disease (PD) in order to measure disease progression and as a response to therapy. In the brain, α-Synuclin (α-Syn) pathology associates with disease onset and progression. Importantly, α-Syn pathology is also found in peripheral tissues and suspected to precede a pathogenic spread to the brain. The occurrence of α -Syn in accessible human fluids, including in blood plasma and red blood cells, underlies the interest in peripheral α-Syn as a biomarker for PD.

She developed a "tailor-designed" ELISA assay for the detection of α-Syn in human samples. The assay consists of the biochemical property of α-Syn to specifically bind membrane lipids. The lipid-ELISA assay we developed utilizes immobilized lipids to capture α-Syn from a test sample. α-Syn capture is followed by detection of the bound α-Syn, using an anti α-Syn antibody and a quantitative enzymatic reaction, consisting of horseradish peroxidase (HRP) or electrochemiluminescence (ECL)-based-detection. The assay is both specific and sensitive as we have recently reported (Abd El-Hadi et al., Sci. Rep 2015; Abd El-Hadi et al., Anal. Bioanal Chem. 2016)

The added value of her methods relies in its sensitivity and simplicity. That is, upon binding to lipids, the un-structured α-Syn protein is known to gain a structure, which improves its recognition by the detecting antibody. In addition, using her lipid-ELISA, a specific pathogenic form of the protein, a proteinase K-resistant α-Syn form, is detectable. Recently, she has demonstrated a proof of concept to the high potential of this lipid-ELISA assay in differentiating healthy and Parkinson's affected subjects.

She is now in the process of analyzing a large cohort of samples, including moderate and severe PD, and control cases. The analysis is part of the PD-BioFind clinical study. α-Syn measurements are normalized to various blood parameters, including hemoglobin, ferritin and blood iron levels to improve assay specificity and reduce the degree of overlap between groups.



KAYE-EINSTEIN SCHOLARSHIPS 2016/2017

FIRST YEAR RECIPIENTS

ROTEM KALEV-ALTMAN
Koret School of Veterinary Medicine, Ph.D. Candidate
Robert H. Smith Faculty of Agriculture, Food and Environment

ORI KATZ
Faculty of Law, Ph.D. Candidate

ADI RECHES
Biomedical Sciences, Ph.D. Candidate
Faculty of Medicine

YOAV ROMACH
Racah Institute of Physics, Ph.D. Candidate
Faculty of Science

LITAL YONA
Paul Baerwald School of Social Work and Social Welfare, Ph.D. Candidate

KAYE WINNERS

Previous Winners Kaye Innovation Awards at The Hebrew University of Jerusalem

Kaye Winners **2016**

Inventor: **PROF. YOEL SASSON**
Casali Institute of Applied Chemistry
Institute of Chemistry
Faculty of Science
Invention: **Novel Reagent for Purification of Oil-Contaminated Soil**

Inventor: **DR. MEITAL RECHES**
Institute of Chemistry
Faculty of Science
Invention: **Biocompatible and Environmentally-Friendly Antifouling Materials**

Inventors: **PROF. REUVEN REICH, PROF. ELI BREUER, PROF. AMNON HOFFMAN**
Institute for Drug Research
School of Pharmacy
Faculty of Medicine
Invention: **Novel Carbamoylphosphonate-Based Compounds for the Treatment and Prevention of Metastatic Diseases**

Inventor: **DR. PINCHAS TSUKERMAN**
Department of Immunology and Cancer Research
Institute for Medical Research Israel-Canada (IMRIC), Faculty of Medicine
Invention: **New Immunotherapy Against Cancer**

Inventor: **MR. OREN BEN DOR**
Department of Applied Physics
The Rachel and Selim Benin School of Computer Science and Engineering
Faculty of Science
Invention: **Chiral Molecular-Based Spin Devices**

Kaye Winners **2015**

Inventor: **PROF. URI BANIN**
Institute of Chemistry and the Harvey M. Krueger Family Center for Nanoscience and Nanotechnology, Faculty of Science
Invention: Semiconductor Quantum Rods - A Quantum Leap for Displays

Inventor: **PROF. OFER MANDELBOIM**
Department of Immunology and Cancer Research
Institute for Medical Research Israel-Canada (IMRIC), Faculty of Medicine
Invention: Development of Monoclonal Antibody against NKp46 for the Treatment of Type 1 Diabetes Mellitus (T1D)

Inventor: **DR. ZVI PELEG**
Robert H. Smith Institute of Plant Sciences and Genetics in Agriculture
Robert H. Smith Faculty of Agriculture, Food and Environment
Invention: Development of New Elite Sesame Cultivars Adapted for Mechanical Harvest with Enhanced Yield and Seed Quality

Inventor: **DR. ELAD HOROWITZ**
Department of Immunology and Cancer Research
Institute for Medical Research Israel-Canada (IMRIC), Faculty of Medicine
Invention: Methods of Predicting Efficacy of an Anti-VEGFA Treatment for Solid Tumors

Inventor: **MS. GEULA HANIN**
Department of Biological Chemistry, Silberman Institute of Life Sciences, Faculty of Science
Invention: Down Regulating miRNA-132 for the Treatment of Lipid Related Disorders

2016
2015
2014
2013
2012
2011
2010
2009
2008
2007
2006
2005
2004
2003
2002
2001
2000
1999
1998
1997
1996
1995
1994

Kaye Winners **2014**

Inventor: **PROF. SIMON BENITA** & **DR. TAHER NASSAR**
Institute for Drug Research (IDR)
School of Pharmacy, Faculty of Medicine
Invention: Development of an Original Nano-Delivery Platform for Markedly Improving the Oral Absorption of Poorly Absorbed Drugs and Proteins

Inventor: **PROF. SHLOMO MAGDASSI**
Casali Center for Applied Chemistry
Institute of Chemistry, Faculty of Science
Invention: Transparent Conductive Coffee Rings for Touch Screens

Inventor: **PROF. MICHAL BANIYASH**
Department of Immunology and Cancer Research
Institute for Medical Research - Israel-Canada
Hebrew University-Hadassah Medical School
Invention: Novel Prognostic/Diagnostic Biomarkers for Detecting the Immune Status of Patients Suffering from Diseases Characterized by Chronic Inflammation and Associated Immunosuppression

Inventor: **MICHAEL BRANDWEIN**
Biofilm Research Laboratory
Institute of Dental Sciences
Faculty of Dental Medicine
Invention: Novel AntiBiofilm/Antibacterial Polymer for Food Packaging

Inventor: **YOTAM BAR-ON**
Department of Immunology and Cancer Research
Institute for Medical Research - Israel-Canada
Hebrew University-Hadassah Medical School
Invention: Development of Novel Antibodies for the Treatment of Influenza Infections

Kaye Winners **2013**

Inventor: **PROF. ILAN SELA**
Robert H. Smith Institute for Plant Sciences and Genetics
Robert H. Smith Faculty of Agriculture, Food and Environment
Invention: Silencing of Bee-Affecting Viral Genes in order to Control CCD

Inventor: **PROF. AVI DOMB**
Institute for Drug Research (IDR)
School of Pharmacy, Faculty of Medicine
Invention: Maze Water Purification System

Inventor: **PROF. RAYMOND KAEMPFER**
Department of Biochemistry and Molecular Biology
Institute for Medical Research Israel-Canada (IMRIC)
Hebrew University-Hadassah Medical School, Faculty of Medicine
Invention: Reduction of Inflammatory Disease Symptoms with Short Peptides that Inhibit Signaling through CD28

Inventor: **URI BEN-DAVID**
Department of Genetics
Silberman Institute of Life Sciences
Faculty of Science
Invention: PluriSIns – Pluripotent Specific Inhibitors

Inventor: **MARGANIT COHEN-AVRAHAMI**
Institute of Chemistry
Faculty of Science
Invention: Transdermal Delivery Vehicles for NSAIDs: The Combination of Liquid Crystals with Cell-Penetrating Peptides

Inventor: **NOA KAYNAN**
Department of Immunology and Cancer Research
Institute for Medical Research Israel-Canada (IMRIC)
Hebrew University-Hadassah Medical School, Faculty of Medicine
Invention: Generation of 'Super' Fc Antibody for Improving Medical Treatments

Kaye Winners **2012**

Inventor: **PROF. RAPHAEL (RAFFI) GOREN**
The Robert H. Smith Faculty of Agriculture, Food and Environment
Invention: The Search for a Novel Water-Soluble Cyclopropene Derivative Antagonist (CPAS) of Ethylene Action in Agricultural Crops

Inventor: **PROF. SAUL YEDGAR**
Department of Biochemistry and Molecular Biology
Institute for Medical Research Israel-Canada (IMRIC)
Faculty of Medicine
Invention: A Novel Class of Multi-Functional Anti-Inflammatory Drugs (MFAIDs) for the Treatment of Inflammatory/Allergic Diseases

Inventor: **PROF. HAYA LORBERBOUM-GALSKI**
Department of Biochemistry and Molecular Biology
Institute for Medical Research Israel-Canada (IMRIC)
Faculty of Medicine
Invention: Cell and Organelle-Directed Protein Replacement Therapy for Mitochondrial and other Metabolic Diseases

Inventor: **LITAL MAGID**
Institute for Drug Research
Faculty of Medicine
Invention: Novel Cannabinoid Receptor Type 2 Selective Agonists for the Treatment of Inflammatory Conditions and Acute Central Nervous System Injury

Inventor: **IDIT SAGIV-BARFI**
Alexander Silberman Institute of Life Sciences
Faculty of Science
Invention: Novel T Cells Proliferation Inhibitors

Inventor: **CHAMUTAL GUR, M.D.**
Ph.D. student under the supervision of Prof. Ofer Mandelboim
Lautenberg Center for General and Tumor Immunology
Institute for Medical Research Israel-Canada (IMRIC)
Faculty of Medicine
Invention: Generation of Anti-NKp46 mAb for the Treatment of Type 1 Diabetes

Kaye Winners **2011**

Inventor: **PROF. HAIM D. RABINOWITCH**
Robert H. Smith Institute of Plant Sciences and Genetics in Agriculture
Robert H. Smith Faculty of Agriculture, Food and Environment
Invention: Genetic Innovations in Vegetable Crops: The Cornerstone of Israel's Prominence in Hi-BioTech Seed Industries

Inventor: **PROF. DAN GAZIT**
Skeletal Biotech Laboratory
Faculty of Dental Medicine
Invention: Novel Technologies for Adult Stem Cell Manipulation and Applications in Tissue Engineering and Regenerative Medicine

Inventor: **DR. RAANAN FATTAL**
Benin School of Computer Science and Engineering, Faculty of Science
Invention: Second-Generation Wavelet-Based Image Enhancement

Inventor: **MS. KATY MARGULIS-GOSHEN**
Casali Institute of Applied Chemistry, Faculty of Science
Invention: Formation of Organic Nanoparticles from Microemulsions: Enhancing Water Solubility for Improved Biological Performance in Pharmaceutics, Agriculture and Cosmetics

Inventor: **MR. YFTAH TAL-GAN**
Institute of Chemistry, Faculty of Science
Invention: Development of New Peptide-Based Inhibitors of Protein Kinase B (PKB) as Potential Drugs for Cancer

Inventor: **MS. ADA GRIN**
Institute for Drug Research
Faculty of Medicine
Invention: Tissue Regeneration Membrane

Kaye Winners **2010**

Inventor: **PROF. NISSIM BENVENISTY**
Silberman Institute of Life Sciences, Faculty of Science
Invention: Technologies to Enable Directed Differentiation of Human Embryonic Stem Cells

Inventor: **PROF. ODED SHOSEYOV**
The Robert H. Smith Institute of Plant Sciences and Genetics in Agriculture
The Robert H. Smith Faculty of Agriculture, Food and Environment
Invention: Molecular Farming of Human Recombinant Collagen in Transgenic Tobacco Plants

Inventor: **PROF. SHMUEL PELEG**
Benin School of Computer Science and Engineering, Faculty of Science
Invention: Video Synopsis: Summarizing and Indexing Surveillance Video

Inventor: **PROF. ALEXANDER VAINSTEIN**
The Robert H. Smith Institute of Plant Sciences and Genetics in Agriculture
The Robert H. Smith Faculty of Agriculture, Food and Environment
Invention: Towards Tailor-Made Crops and Compounds

Inventor: **MS. MICHAL ISAACSON**
Ph.D. student of Dr. Noam Shoval, Department of Geography, Faculty of Social Sciences
Invention: A Novel System for Tracking and Analyzing Human Spatial Behavior by Monitoring People's Mobility for Tourism, Town Planning and Healthcare Applications

Inventor: **MR. AVIAD HAI**
Ph.D. student of Prof. Micha Spira Department of Neurobiology Alexander Silberman Institute of Life Sciences Faculty of Science
Invention: In-cell Recordings and Stimulation: A Fundamental Breakthrough Concept and Technology for Neuroprosthetics

Inventors: **MR. EZEQUIEL WEXSELBLATT**
Ph.D. Supervisor: Prof. Jehoshua Katzhendler Institute for Drug Research, School of Pharmacy, Faculty of Medicine
MR. ROEE VIDAVSKI
Ph.D. Supervisor: Prof. Gad Glaser Department of Developmental Biology and Cancer Research
Institute for Medical Research Israel-Canada (IMRIC), Faculty of Medicine
Invention: Compounds for Treating Bacterial Infections

Inventor: **MR. MICHAEL GROUCHKO**
Ph.D. student of Prof. Shlomo Magdassi Casali Institute of Applied Chemistry, Institute of Chemistry Faculty of Science
Invention: Air Stable Copper Nanoparticles: Conductive Inks for Printed Electronics

Kaye Winners **2009**

Inventor: **PROF. ABRAHAM HOCHBERG**
Department of Biological Chemistry, Faculty of Science
Invention: From a Noncoding Oncofetal RNA to Cancer Therapy: Personalizing Medicine with H19

Inventor: **PROF. SHLOMO SASSON**
Department of Pharmacology & Experimental Therapeutics, School of Pharmacy
Invention: Novel D-Xylose Derivatives: A New Class of Antihyperglycemic Compounds

Inventor: **PROF. DAPHNE ATLAS**
Department of Biological Chemistry, Faculty of Science
Invention: Development of Small Molecules for the Treatment of Neurodegenerative Diseases

Inventor: **PROF. ARIEH GERTLER**
Institute of Biochemistry, Food Science and Nutrition,
Robert H. Smith Faculty of Agriculture, Food and Environment
Invention: Development of Leptin Antagonists and their Potential Use as Therapeutic Modalities

Inventor: **MR. SHAY SELA**
Ph.D. student of Prof. Eli Keshet, Institute for Medical Research Israel-Canada, Faculty of Medicine
Invention: The Identification of a Novel Prognostic and Diagnostic Marker of Preeclampsia

Inventor: **MR. DIMA LIBSTER**
Ph.D. student of Prof. Nissim Garti and Prof. Gil Shoham,
Casali Institute of Applied Chemistry, Faculty of Science
Invention: Lyotropic Hexagonal Liquid Crystals as Carriers of Therapeutic Peptides for Transdermal Administration: Solubilization and Structural Characterization

Inventor: **MR. SHAUL LAPIDOT**
Ph.D. student of Prof. Oded Shoseyov, Smith Institute for Plant Sciences and Genetics in Agriculture
Robert H. Smith Faculty of Agriculture, Food & Environment
Invention: Compositions Comprising Fibrous Polypeptides and Polysaccharides

Inventor: **MS. NETA PESSAH**
Ph.D. student of Prof. Meir Bialer and Prof. Boris Yagen, School of Pharmacy
Invention: α-Fluoro and α-Chloro 2,2,3,3 -Tetramethycyclopropylcarboxamide:
Two Novel Chemical Entities for the Treatment of Epilepsy and Other Disorders

Kaye Winners **2008**

Inventor: **PROF. DANIEL COHN**
Casali Institute of Applied Chemistry, Institute of Chemistry, Faculty of Science
Invention: Tailor-made Biodegradable Polymers for the Prevention of Post-surgical Adhesions

Inventor: **PROF. HERMONA SOREQ**
Department of Biological Chemistry, Silberman Institute of Life Sciences, Faculty of Science
Invention: Engineered Human Cholinesterases and RNA-Targeted Agents to Suppress Their Functioning

Inventors: **DR. ARIE DAGAN** and **PROF. SHIMON GATT**
Department of Biochemistry, Faculty of Medicine
Invention: Development of Novel Anti-cancer Drugs

Inventor: **MR. YANIV SEMEL**
Ph.D. student under the supervision of Prof. Dani Zamir
The Robert H. Smith Institute of Plant Sciences and Genetics in Agriculture
Faculty of Agricultural, Food and Environmental Quality Sciences
Invention: Phenom Networks: A Web-based System for the Analysis of Quantitative Phenotypes on Both Plants and Animals for Breeding and Research

Inventor: **MR. NADAV KIMELMAN-BLEICH**
Ph.D. and DMD student under the supervision of Prof. Dan Gazit
Skeletal Biotechnology Laboratory, Faculty of Dental Medicine
Invention: Scaffolds with Oxygen Carriers and Their Use in Tissue Engineering

Inventor: **MR. DIMA SHEYNI**
Ph.D. student of Prof. Dan Gazit, Skeletal Biotechnology Laboratory, Faculty of Dental Medicine
Invention: Ultrasound-based Non-viral Gene Delivery Induces Bone Formation *In Vivo*

Inventor: **MR. MATAN RAPOPORT**
Ph.D. student under the supervision of Prof. Haya Lorberboum-Galski
Department of Cellular Biochemistry and Human Genetics, Faculty of Medicine
Invention: Enzyme Replacement Therapy for Mitochondrial Disorders: Lipoamide Dehydrogenase Deficiency as a Proof-of-principle

Kaye Winners **2007**

Inventor: **PROF. DANI ZAMIR**
Smith Institute of Plant Sciences and Genetics in Agriculture
Faculty of Agricultural, Food and Environmental Quality Sciences
Invention: Improving Plant Breeding Using Exotic Genetic Libraries

Inventors: **PROF. MEIR BIALER** and **PROF. BORIS YAGEN**
Departments of Pharmaceutics, and Medicinal Chemistry and Natural Products
School of Pharmacy, Faculty of Medicine
Invention: Design and Development of Valnoctamide: A New Drug with Stereoselective CNS Activities

Inventor: **PROF. LEO JOSKOWICZ**
School of Engineering and Computer Science, Faculty of Science
Invention: An Image-guided System with a Miniature Robot for Precise Positioning and Targeting in Keyhole Neurosurgery

Inventor: **MR. YANIV LINDE**
Student of Prof. Chaim Gilon, Department of Organic Chemistry, Faculty of Science
Invention: A Novel Oral Anti-obesity Drug Candidate: Reduction of Food Consumption by Melanocortin-4 Peptide Agonist

Inventor: **MR. EREZ PODOLY**
Student of Prof. Hermona Soreq, Department of Biological Chemistry, Faculty of Science
Invention: A Natural Brain Protein Protection from Alzheimer's Disease

Inventor: **MR. MORAN FARHI**
Student of Prof. Alexander Vainstein and Dr. Hagai Abeliovich
Smith Institute of Plant Sciences and Genetics in Agriculture
Faculty of Agricultural, Food and Environmental Quality Sciences
Invention: Engineering Saccharomyces Cerevisiae for the Production of Methylbenzoate and Resistance to Benzoic Acide for Uses in the Food Industry

Inventor: **MR. YUVAL AVNIR**
Student of Prof. Yechezkel Barenholz, Department of Biochemistry, Faculty of Medicine
Invention: Liposomal Glucocorticoids for Treating Inflammatory States

Kaye Winners **2006**

Inventor: **DR. YONATAN ELKIND**
Smith Institute of Plant Sciences and Genetics in Agriculture
Faculty of Agricultural, Food and Environmental Quality Sciences
Invention: Breeding of Pepper Varieties Adapted for Protected Cultivation under Mild Winter Conditions

Inventor: **PROF. ELKA TOUITOU**
Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine
Invention: Ethosome Innovative Technology

Inventor: **PROF. MOSHE KOTLER**
Department of Pathology, Faculty of Medicine
Invention: A Prophylactic Vaccine Preventing a Mortal Viral Disease of Koi Fish and Carps

Inventors: **PROF. MEIR BIALER** and **PROF. BORIS YAGEN**
Departments of Pharmaceutics, and Medicinal Chemistry and Natural Products, School of Pharmacy, Faculty of Medicine
Invention: Design and Development of a New Drug with Enantioselective CNS Activities – Propylisopropyl Acetamide (PID)

Inventor: **MS. ELENA KHAZANOV**
Student of Prof. Yechezkel Barenholz, Department of Biochemistry, Faculty of Medicine
Invention: Tumorosuppressive Therapy by Liposome Containing both Doxorubicin and Ceramide

Inventor: **MR. YEHOSHUA MAOR**
Student of Prof. Raphael Mechoulam, Department of Medicinal Chemistry and Natural Products, School of Pharmacy, Faculty of Medicine
Invention: Novel Anti-hypertensive Agents based on Cannabis Constituent with Anti-inflammatory Properties-synergistic Beneficial Cardiovascular Effects

Inventor: **MR. NIR QVIT**
Student of Prof. Chaim Gilon, Department of Organic Chemistry, Faculty of Science
Invention: SIB: Small Integrated Building Blocks

Inventor: **MS. KHULOUD TAKROURI**
Student of Prof. Morris Srebnik
Department of Medicinal Chemistry and Natural Products, School of Pharmacy, Faculty of Medicine
Invention: Synthesis and Anti-microbial Activity of a Novel Series of Alkyldimethylamine Cyanoboranes and their Derivatives

Kaye Winners **2005**

Inventors: **PROF. SHLOMO MAGDASSI** and **DR. YELENA VINETSKY**
Casali Institute of Applied Chemistry, Faculty of Science
Invention: Ceramic Ink Jets for Digital Printing on Glass

Inventor: **DR. ZEHAVA UNI**
Department of Animal Sciences, Faculty of Agricultural, Food and Environmental Quality Sciences
Invention: Enhancement of Development of Oviparous Species by *In Ovo* Feeding – Feeding Eggs with Natural Nutrient Supplements Before They Hatch to Produce More Robust Chicks

Inventor: **PROF. SIMON BENITA**
Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine
Invention: Cationic Emulsions for Ophthalmic Drug Delivery

Inventor: **PROF. URI BANIN**
Department of Physical Chemistry and Center for Nanoscience and Nanotechnology, Faculty of Science
Invention: Semiconductor Nanocrystals for Optical, Electronic, Imaging and Biological Applications

Inventor: **MR. TALEB MOKARI**
Student of Prof. Uri Banin
Department of Physical Chemistry and Center for Nanoscience and Nanotechnology, Faculty of Science
Invention: Semiconductor Nanocrystals with Conductive Zone

Inventor: **MR. ADEL JABBOUR**
Student of Prof. Doron Steinberg and Prof. Morris Srebnik
Department of Medicinal Chemistry and Natural Products, School of Pharmacy and Institute of Dental Sciences, Faculty of Dental Medicine
Invention: Interfering in Bacterial Cross-talk: A Novel Means to Influence Pathogenicity of Biofilms

Inventor: **MS. NATALYA KOGAN**
Student of Prof. Raphael Mechoulam, Department of Medicinal Chemistry and Natural Products, School of Pharmacy, Faculty of Medicine
Invention: Cancer Drug – Use of Quinonoid Derivatives of Cannabinoids and Such Novel Compounds in the Treatment of Malignancies

Inventor: **MR. RANI POLAK**
Student of Prof. Eran Goldin and Dr. Eitan Israeli, Faculty of Medicine
Invention: GourMed – Cooking School that Will Develop Recipes and Run a Course for People with Dietary Limitations due to Chronic Diseases

Inventors: **STAFF OF PROF. MICHA WEISS**
Department of Computerized Information Systems, Computerized Student Course Registration Project Team
Invention: Computerized Student Course Registration Project Team"Smart Raffle"

Kaye Winners **2004**

Inventor: **PROF. AMNON SHASHUA**
School of Engineering and Computer Science, Faculty of Science
Invention: Monocular Visual Processing for On-board Driving Assistance

Inventors: **PROF. ITAMAR WILLNER**, **DR. EUGENII KATZ**, **DR. FERNANDO PATOLSKY** and **MR. YOSSI WEIZMANN**
Institute of Chemistry, Faculty of Science
Invention: Optoelectronic Detection of Telomerase in Cancer Cells: Development of a Screening Test for Urinary Bladder in Urine Samples

Inventors: **PROF. MICHAEL FRIEDMAN** and **PROF. AMNON HOFFMAN**
Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine
DR. ERAN LAVY
Koret School of Veterinary Medicine, Faculty of Agricultural, Food and Environmental Quality Sciences
Invention: Novel Gastro-retentive Dosage Form (GRDF) – A Means for Sustained Administration of Drugs with Narrow Absorption Window at the Upper Gastrointestinal Tract

Inventors: **MR. AVIRAM SPERNATH** and **MS. IDIT YULI-AMAR**
Students of Prof. Nissim Garti, Casali Institute of Applied Chemistry, Faculty of Science
Invention: New Nanosized Vehicles for Triggering and Targeting of Phytochemicals

Inventor: **MS. AVITAL TORRES-KERNER**
Student of Prof. Morris Srebnik, Department of Medicinal Chemistry and Natural Products, School of Pharmacy
Invention: New Natural Sunscreens: UVR Absorbing Compounds from Lichens and Cyanobateria

Inventor: **DR. HIJAZI ABU ALI**
Student of Prof. Morris Srebnik, Department of Medicinal Chemistry and Natural Products, School of Pharmacy, Faculty of Medicine
Invention: Novel Organoboronic Compounds – Synthesis and Biological Activity

Inventor: **MR. TAREQ JUBETH**
Student of Prof. Abraham Rubinstein and Prof. Yechezkel Barenholz, Departments of Pharmaceutics and Biochemistry, Faculty of Medicine
Invention: Targeting the Intestinal Mucosa by Charged Liposomes

Inventor: **MR. OMRI BEN-ZION**
Student of Prof. Amos Nussinovitch
Institute of Biochemistry, Food Science and Nutrition
Faculty of Agricultural, Food and Environmental Quality Sciences
Invention: Novel Method and Apparatus for Testing the Rolling Tack of Pressure-sensitive Adhesive Methods

Kaye Winners **2003**

Inventors: **PROF. NISSIM GARTI** and **DR. ABRAHAM ASERIN**
Casali Institute of Applied Chemistry, Faculty of Science
Invention: Nano-sized Self-assembled Structured Liquids

Inventor: **DR. ABDULLAH HAJ-YEHIA**
Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine
Invention: Design, Synthesis, and Biological Activity of Novel Hybrid Drugs

Inventor: **DR. JONATHAN MIRVIS**
Melton Centre for Jewish Education, School of Education
Invention: Florence Melton Adult Mini-School: A Social Franchise Model

Inventor: **MS. DRORA BALAGA**
Smith Institute of Plant Sciences and Genetics in Agriculture,
Faculty of Agricultural, Food and Environmental Quality Sciences
Invention: "TOMATO" Computerized System, Breeding Hybrid Varieties

Inventor: **ENG. TOM KOEVARY**
Casali Institute of Applied Chemistry, Faculty of Science
Invention: The Centre for Process Development: A Platform for Thousands of "Inventors to Order" for Industry

Inventor: **PROF. ZICHRIA ZAKAY-RONES**
Institute of Microbiology, Faculty of Medicine
Invention: Anti-cancer Therapy by Newcastle Disease Virus (NDV)

Inventor: **MR. ARIE GRUZMAN**
Student of Prof. Shlomo Sasson, Department of Pharmacology and Experimental Therapeutics, School of Pharmacy,
Faculty of Medicine
Invention: Novel Anti-hyperglycemic Drugs

Inventor: **MS. AVIVA JOSEPH**
Student of Prof. Eli Kedar and Prof. Yechezkel Barenholz, The Lautenberg Center for Immunology
and Department of Biochemistry, Faculty of Medicine
Invention: INFLUSOME-VAC, Three Novel, Highly Efficient Influenza Vaccines

Inventor: **MR. HADI ASLAN**
Student of Prof. Dan Gazit, Skeletal Biotechnology Laboratory, Faculty of Dental Medicine
Invention: Novel Methods for Stem Cells Based Therapy

Inventor: **MR. SHAI SHALEV-SHWARTZ**
Student of Prof. Yoram Singer, School of Engineering and Computer Science, Faculty of Science
Invention: A Query Melody System

Inventor: **MR. MICKEY KOSLOFF**
Student of Prof. Zvi Selinger, Silberman Institute of Life Sciences, Faculty of Science
Invention: Drug-assisted Catalysis, Novel Cancer Therapeutics

Inventor: **MR. ABED AL-AZIZ QUNTAR**
Student of Prof. Morris Srebnik, Department of Medicinal Chemistry and Natural Products, School of Pharmacy,
Faculty of Medicine
Invention: The Synthesis of Novel Di-and Tri-Vinylphosphonates

Kaye Winners **2002**

Inventor: **PROF. SHMUEL BEN-SASSON**
Department of Experimental Medicine and Cancer Research, Faculty of Medicine
Invention: Kin-Ace Technology – A Broad Platform Technology for Disease Control via the Interception of Intracellular Signaling

Inventors: **PROF. MICHAEL SELA** and **DR. DORON STEINBERG**
Department of Oral Biology, Faculty of Dental Medicine
PROF. MICHAEL FRIEDMAN
School of Pharmacy, Faculty of Medicine
PROF. W. AUBREY SOSKOLNE
Department of Periodontics, Faculty of Dental Medicine
Invention: Periochip-sustained Release Treatment for Periodontal Diseases

Inventor: **PROF. GERSHON GOLOMB**
Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine
Invention: Nanoparticulate Drug Delivery Systems for Restenosis Therapy

Inventor: **PROF. SHMUEL PELEG**
School of Engineering and Computer Science, Faculty of Science
Invention: OMNISTEREO: Capturing and Viewing 3D Stereoscopic Panoramic Images

Inventor: **DR. SHLOMO YITZCHAIK**
Department of Inorganic and Analytical Chemistry, Faculty of Science
Invention: Molecular Layer Epitaxy (MLE)

Inventor: **DR. WILLIAM (BILL) BREUER**
Department of Biological Chemistry, Faculty of Science
Invention: A Test for the Detection of Toxic Forms of Iron in Human Plasma

Inventor: **DR. ITSHAK GOLAN**
The Lautenberg Center for Immunology, Faculty of Medicine
Invention: Novel CD44 Variant: Potential Target in the Therapy of Rheumatoid Arthritis

Inventor: **MR. EYTAN KLAUSNER**
Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine
Invention: Novel Gastroretentive Dosage Forms

Inventor: **MS. NINA ISOHERRAREN**
Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine
Invention: New Anti-epileptic Drug

Inventor: **MR. ALEXEI SHIR**
Department of Biological Chemistry, Faculty of Science
Invention: Targeted dsRNA Brain Cancer Therapy

Inventor: **MR. FERNANDO PATOLSKY**
Institute of Chemistry, Faculty of Science
Invention: Creating Multi-stress Resistance in Arabidopsis

Inventor: **MR. ALEXANDER MAZEL**
Department of Plant Sciences, Faculty of Science
Invention: Creating Multi-stress Resistance in Arabidopsis Plants

Inventor: **MS. LITAL ALFONTA**
Institute of Chemistry, Faculty of Science
Invention: An Electronic Sensor to Identify Drug Resistance in HIV Patients

Inventor: **MR. YOSSI GAFNI**
Skeletal Biotechnology Laboratory, Faculty of Dental Medicine
Invention: Vascular Tissue Engineering

Inventor: **DR. GADI PELLED**
Skeletal Biotechnology Laboratory, Faculty of Dental Medicine
Invention: Engineering of Complex Hybrid Tissues

Kaye Winners **2001**

Inventor: **PROF. EDUARDO MITRANI**
Silberman Institute of Life Sciences, Faculty of Science
Invention: Micro-organ Technology for Genetically Engineered Bio-pumps

Inventor: **PROF. SIMON BENITA**
Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine
Invention: Drug Delivery through Positively Charged Submicron Emulsions

Inventors: **MR. DANNY VINITSKY** and **MR. EITAN RAZ**
Department of Computerized Information Systems
MR. YEHAVI BOURVINE
Computation Center
Invention: Short Message Service (SMS) Supplied by All Cellphone Operators Sending Short Text Messages to Students' Phones

Inventor: **DR. ANDREW SHIPWAY**
Institute of Chemistry, Faculty of Science
Invention: Novel Technology for the Generation of Electronic Circuits Using a Novel Computer-assisted Printing Method

Inventors: **PROF. YONA CHEN**, **PROF. YITZHAK HADAR** and **MR. AMIR TOAR**
Department of Soil and Water Sciences, Faculty of Agricultural, Food and Environmental Quality Sciences
Invention: "RollCom" – A Novel, Simple, and Easy to Operate Composting Apparatus

Inventor: **PROF. ITAMAR GATI**
Department of Psychology, Faculty of Social Sciences, and School of Education
Invention: "Future Directions" Internet Site to Facilitate Career Decision Making

Inventor: **MS. MIRIAM V. KOTT-GUTKOWSKI**
Silberman Institute of Life Sciences, Faculty of Science
Invention: MDRTL *Ex-Vivo* Kit Measure and Select Effective Multi-drug Resistance Blocker

Inventor: **MS. SUSANNA TCHILIBON**
School of Pharmacy, Faculty of Medicine
Invention: HU-320 Anti-inflammatory Drug

Inventor: **MR. YEHUDA GIL**
The Center for Multimedia-Assisted Instruction
Invention: The Mobile Smart Table-MST Combining Various Multimedia Accessories

Kaye Winners **2000**

Inventor: **PROF. MARTA WEINSTOCK-ROSIN**
Department of Pharmacology, School of Pharmacy, Faculty of Medicine
Invention: Development of Exelon: A Drug for the Treatment of Alzheimer's Disease (AD)

Inventor: **PROF. MEIR BIALER**
Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine
Invention: Valproyl Glycinamide (TV 1901): A New Anti-epileptic (AED) and CNS Drug for the Treatment of Migrane, Neuropathic Pain, and Mania

Inventors: **PROF. AVNER ADIN** and **DR. NICOLAI VESCAN**
Assistants: **MS. RIVKA KALBO** and **MS. LUBA RUBINSTEIN**
Division of Environmental Sciences, School of Applied Science, Faculty of Science
Invention: "Electro-Flocculation" for Water Treatment and Reuse

Inventor: **DR. BARUCH SCHWARZ**
School of Education
Invention: The "Kishurim Project"

Inventor: **MR. ITAI PELES**
Computer Authority, Ein Kerem
Invention: IBTS-Internet Based Testing System to Replace Traditional Questionnaires and Written Tests

Inventor: **MR. REUVAN AMAR**
Computer Authority, Mount Scopus
Invention: HUDAP-Hebrew University Data Analysis Package

Inventor: **MR. MEIR GLICK**
Department of Medicinal Chemistry, School of Pharmacy, Faculty of Medicine
Invention: Novel Stochastic Algorithm for Use in Life Sciences, Physics, Telecommunications and Economics

Inventor: **MR. GIL RONEN**
Department of Genetics, Silberman Institute of Life Sciences, Faculty of Science
Invention: Novel Plant Gene "B" and Methods to Genetically Manipulate Color Formulation in Plants

Inventor: **MR. NIR SITVANI**
Department of Animal Sciences, Faculty of Agricultural, Food and Environmental Quality Sciences
Invention: Antelope-like Stimulating Device to Reduce Stress of Wild Animals in Captivity

Kaye Winners **1999**

Inventor: **DR. ODED SHOSEYOV**
Department of Plant Pathology and Microbiology,
Faculty of Agricultural, Food and Environmental Quality Sciences
Invention: CBD Technology – Using the CBD Protein to Bind Various Molecules to Cellulose

Inventor: **PROF. ELISHA TEL-OR**
Department of Agricultural Botany and Otto Warburg Center for Biotechnology in Agriculture
Faculty of Agricultural, Food and Environmental Quality Sciences
Invention: Azolla Biofilter for Waste Treatment

Inventor: **PROF. HERMONA SOREQ**
Department of Biological Chemistry, Faculty of Science
Invention: Antisense Technology – To Treat Various Neurodegenerative Syndromes

Inventors: **MR. YARON BEN-ETZION**
Head of Manpower and Payroll
MS. CHAVA SPRUCH
Head of Payroll System, Department for Computerized Information Systems
Invention: A Solution for BUG 2000

Inventor: **MR. LEON MARGOLIN**
Department of Anatomy and Cell Biology, Faculty of Medicine
Invention: A Mask for the Treatment of Headaches

Inventor: **MR. GADI TURGEMAN**
Bone Gene Therapy and Molecular Pathology Laboratory, Faculty of Dental Medicine
Invention: The Reciprocal Differentiation System, Controlling the Level of BMP2 Expression

Kaye Winners **1998**

Inventor: **PROF. ITAMAR WILLNER**
Institute of Chemistry, Faculty of Science
Invention: Layered Electrically-Contacted Enzyme-Electrodes and Antigen/Antibody Assembles for Electrochemical and Piezoelectrical Biosensors and Immunosensor Devices

Inventors: **PROF. NISSIM GARTI**
Casali Institute of Applied Chemistry, Faculty of Science
DR. YURI FELDMAN
Department of Applied Physics, Faculty of Science
Invention: Time Domain Dielectric Spectrometer (TDDS) for Investigation of Advanced Materials and Medical Systems

Inventors: **PROF. MICHAEL SCHIEBER**, **DR. JACOB NISSENBAUM**, **DR. LEONID MELKHOV** and **MS. ASAF ZUCK**
School of Applied Science, Faculty of Science
Invention: Polycrystalline Hg 12 X-Ray Detector Plates for Digital Radiology

Inventors: **PROF. DAVID AVNIR**
Institute of Chemistry, Faculty of Science
PROF. SERGEI BRAUN
Silberman Institute of Life Sciences, Faculty of Science
PROF. OVADIA LEV
Division of Environmental Sciences, Faculty of Science
PROF. MICHAEL OTTOLENGHI
Institute of Chemistry, Faculty of Science
Invention: Reactive Organic Sol-gel Ceramic Materials

Inventor: **PROF. JOSEPH HIRSCHBERG**
Silberman Institute of Life Sciences, Faculty of Science
Invention: Genetic Engineering of Astaxanthin Production in Transgenic Plants

Inventor: **MR. AMIR ZUKER**
Kennedy-Leigh Centre for Horticultural Research, Faculty of Agricultural, Food and Environmental Quality Sciences
Invention: Transgenic Carnation Plants with Novel Characteristics

Inventor: **MR. GALEN MARQUIS**
Institute of Jewish Studies, Faculty of Humanities
Invention: Production of The Hebrew University of Jerusalem Bible Project

Inventor: **MR. JEHUDA BASNIZKI**
Silberman Institute of Life Sciences, Faculty of Science
Invention: Novel Seed-planted Hybrid Varieties of the Globe Artichoke

Inventor: **MR. ALEXEY KAMYSHNY**
Casali Institute of Applied Chemistry, Faculty of Science
Invention: Form III Aspartame

Kaye Winners **1997**

Inventors: **PROF. YECHEZKEL BARENHOLZ** and **DR. RIVKA COHEN**
Department og Biochemistry, Faculty of Medicine
PROF. ALBERTO GABIZON and **DR. DORIT GOREN**
Hadassah University Hospital
Invention: DOXIL – Liposomal Doxorubicin for Cancer Treatment

Inventor: **PROF. DAPHNE ATLAS**
Department of Biological Chemistry, Faculty of Science
Invention: A New Anti-Parkinson's Drug

Inventors: **PROF. NAVA BEN-ZVI**
Center for Multimedia Assisted Instruction
MR. DAVID RASHTY
Computation Center
MR. ELI KANAI
Snunit Educational Information System, Faculty of Science
Invention: Snunit Educational Information System

Inventor: **MR. YOAV SMITH**
Faculty of Medicine
Invention: The Dermal Imaging System

Inventor: **MS. VARDA HERSHKO**
Institute of Biochemistry, Food Science and Nutrition, Faculty of Agriculture
Invention: Hydrocolloid Coatings for Food and Agricultural Products

Inventor: **MR. SHMARYAHU EZRAHI**
Casali Institute of Applied Chemistry, Faculty of Science
Invention: Fire-resistant Hydraulic Fluids

Kaye Winners **1996**

Inventor: **PROF. SHABTAY DIKSTEIN**
School of Pharmacy, Faculty of Medicine
Invention: Development of Topically-applied Drugs for the International Market

Inventor: **PROF. ABRAHAM SZTEJNBERG**
Department of Plant Pathology and Microbiology, Faculty of Agriculture
Invention: AQ10: A Novel Biofungicide for the Control of Plant Diseases

Inventor: **PROF. DAN DAVIDOV** and **DR. MICHAEL GOLOSOVSKY**
Racah Institute of Physics, Faculty of Science
Invention: High-resolution Millimeter-wave Scanning Microscope

Inventor: **PROF. CHAIM GILON**
Institute of Chemistry, Faculty of Science
Invention: Backbone Cyclization and Cycloscan TM: Novel Technologies for the Fast Discovery of New Peptide Based Drugs

Inventor: **MR. MICHAEL HOICHMAN**
Computer Programmer, Faculty of Medicine
Invention: The "Maestro" Program for Controlling Auditory Experiments

Inventor: **MR. BARAK HERSHKOVITZ**
Faculty of Medicine
Invention: "Biochem Thinker": A New Computer Program to be used by Biochemistry Students as a Tutorial Tool

Kaye Winners **1995**

Inventor: **PROF. ITAI BAB**
Bone Laboratory, Faculty of Dental Medicine
Invention: Osteogenic Growth Peptide (OGP)

Inventor: **PROF. NISSIM GARTI**
Casali Institute of Applied Chemistry, Faculty of Science
Invention: New Emulsifiers

Inventor: **PROF. YECHEZKEL BARENHOLZ**
Department of Biochemistry, Faculty of Medicine
Invention: A Novel Approach to Obstein Efficient and Stable Remote Drug Loading of Liposomes for Clinical Use

Inventors: **DR. EUGENII KATZ**, **MS. AZALIA RIKLIN** and **MS. RON BLONDER**
Institute of Chemistry, Faculty of Science
Invention: Development of Biosensor and Immunosensor Devices

Kaye Winners **1994**

Inventors: **DR. B. SCHWARZBURD** and **DR. MARCELLO CHAFFER**
Department of Animal Sciences, Faculty of Agriculture
Invention: Membrane Vesicles of E. coli as a Potent Non-toxic Vaccine Against Colibacillosis in Poultry

Inventor: **MR. DUDU RASHTY**
Computation Center, Faculty of Science
Invention: The Hebrew University Information Retrieval System

Inventors: **PROF. HAIM RABINOWITCH** and **PROF. NACHUM KEDAR**
Department of Field and Vegetable Crops, Faculty of Agriculture
Invention: Development of Long Shelf-life Tomatoes