THE KAYE INNOVATION AWARDS
AT THE HEBREW UNIVERSITY OF JERUSALEM

June 2017

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
ISAAC KAYE

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 2,790 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 Sheimer 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 Pepticom, 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 Medicine, for her invention: “Haplod Human Embryonic Stem Cells and Somatic Cells”, and to Mr. Ido Sagi for his research on “Lipid’s ELISA”. The prize is also awarded to two promising students: Mr. Idan Eldar for his research on “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 2017 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. Idan Eldar for his 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.

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.

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 Myma 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 graduates 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 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 Myma for their deep involvement and devotion to this institution.

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KAYE WINNERS 2017

Researchers - First Prize

PROF. YUVAL DOR
Department of Developmental Biology and Cancer Research
Institute for Medical Research Israel-Canada
Hebrew University-Hadassah Medical School
Non-Invasive Detection of Tissue Damage

DR. RUTH SHEMER

Researchers - Second Prize

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

Researchers - 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
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.
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 Neurakin B (NKB) and Neurakin 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.

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 leads 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).

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.
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 for resistance to chemotherapy drugs, with implications for cancer therapy. Screening may also be aimed at identifying genes for resistance to chemotherapy drugs, with implications for cancer therapy.

Haploid human ESCs can also be used to perform large-scale genetic screens to identify genes critical for pluripotency or differentiation, potentially leading to the improvement of protocols in regenerative medicine. Haploid human ESCs can also simplify the 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 for resistance to chemotherapy drugs, with implications for cancer therapy.

Sagi also 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 and expansions to study various PD clinical trials. 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 proteasome 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.

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### Kaye Winners 2016

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<td>PROF. YOEL SASSON</td>
<td>Caiski Institute of Applied Chemistry</td>
<td>Novel Reagent for Purification of Oil-Contaminated Soil</td>
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<td>DR MEITAL RECHES</td>
<td>Institute of Chemistry</td>
<td>Biocompatible and Environmentally Friendly Antifouling Materials</td>
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<td>PROF. REUVEN REICH, PROF. ELI BREUER, PROF. AMNON HOFFMAN</td>
<td>Institute for Drug Research School of Pharmacy</td>
<td>Novel Carboxymethylphosphonate-Based Compounds for the Treatment and Prevention of Metastatic Diseases</td>
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<td>DR. PINCHAS TSUKERMAN</td>
<td>Department of Immunology and Cancer Research</td>
<td>New Immunotherapy Against Cancer</td>
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<td>MR OREN BEN DOR</td>
<td>Department of Applied Physics</td>
<td>Chiral Molecular-Based Spin Devices</td>
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<td>The Rachel and Selim Benin School of Computer Science and Engineering</td>
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<tr>
<td>PROF URI BANIN</td>
<td>Institute of Chemistry and the Harvey M. Krueger Family Center for Nanoscience and Nanotechnology Faculty of Science</td>
<td>Novel Carbamoylphosphonate-Based Compounds for the Treatment and Prevention of Metastatic Diseases</td>
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<td>Development of Monoclonal Antibody against MIP46 for the Treatment of Type 1 Diabetes-Mellitus (T1D)</td>
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<td>MS GEULA HANIN</td>
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<td>Down Regulating miRNA-192 for the Treatment of Lipid Related Disorders</td>
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### Previous Winners

Kaye Innovation Awards at The Hebrew University of Jerusalem

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- **Robert H. Smith Faculty of Agriculture, Food and Environment**
- **Dr. Elad Horowitz**
- **Dr. Zvi Peleg**
- **Ms. Geula Hanin**
- **Lital Yona**
- **Yoav Romach**
- **Ori Katz**
- **Adi Reches**
- **Rotem Kalev-Alman**

**2000**
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**1999**
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- **Dr. Elad Horowitz**
- **Dr. Zvi Peleg**
- **Ms. Geula Hanin**
- **Lital Yona**
- **Yoav Romach**
- **Ori Katz**
- **Adi Reches**
- **Rotem Kalev-Alman**

**1998**
- **Robert H. Smith Institute of Plant Science and Genetics in Agriculture**
- **Dr. Elad Horowitz**
- **Dr. Zvi Peleg**
- **Ms. Geula Hanin**
- **Lital Yona**
- **Yoav Romach**
- **Ori Katz**
- **Adi Reches**
- **Rotem Kalev-Alman**

**1997**
- **Robert H. Smith Institute of Plant Science and Genetics in Agriculture**
- **Dr. Elad Horowitz**
- **Dr. Zvi Peleg**
- **Ms. Geula Hanin**
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- **Ms. Geula Hanin**
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- **Yoav Romach**
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**1994**
- **Robert H. Smith Institute of Plant Science and Genetics in Agriculture**
- **Dr. Elad Horowitz**
- **Dr. Zvi Peleg**
- **Ms. Geula Hanin**
- **Lital Yona**
- **Yoav Romach**
- **Ori Katz**
- **Adi Reches**
- **Rotem Kalev-Alman**
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  
Invention: Molecular Farming of Human Recombinant Collagen in Transgenic Tobacco Plants

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

Inventor: **PROF ALEXANDER VAINESTAIN**  
The Robert H. Smith Institute of Plant Sciences and Genetics in Agriculture  
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

Inventor: **MR EZEQUIEL WEKSELBATT**  
Ph.D. student of Prof. Yehuda Katz, Institute for Drug Research, School of Pharmacy, 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 Anti-hyperglycemic Compounds

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

Inventor: **MR SHAY SEDA**  
Ph.D. student of Prof. Elia Kochet, 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 Shoeyov, Smith Institute for Plant Sciences and Genetics in Agriculture  
Invention: Compounds Comprising Fibrous Polypeptides and Polyacrylamides

Inventor: **MS NETA PESSAH**  
Ph.D. student of Prof. Meir Butler and Prof. Boris Yagen, School of Pharmacy  
Invention: α-Fluoro and α-Chloro 2,2,3,3-Tetramethylylpropargylcarboxamide: Two Novel Chemical Entities for the Treatment of Epilepsy and Other Disorders
Kaye Winners 2008

Inventor: PROF DANIEL KOHN
Invention: Tailor-made Biodegradable Polymers for the Prevention of Post-surgical Adhesions

Inventor: PROF HERMONA SORER
Invention: Department of Biological Chemistry, Silberman Institute of Life Sciences, Faculty of Science

Invention: DR ARIE DAGAN and PROF SHIMON GATT
Invention: Department of Biochemistry, Faculty of Medicine

Invention: MR YANIV SEMEL
Ph.D. student under the supervision of Prof. Dani Zamir

Invention: MR NADAV KIMELMAN-BLEICH
Ph.D. and DMD student under the supervision of Prof. Dan Gazit

Invention: MR TIMOT SHEIYNI
Ph.D. student of Prof. Dan Gazit, Skeletal Biotechnology Laboratory, Faculty of Dental Medicine

Invention: MR MATAN RAPPORT
Ph.D. student under the supervision of Prof. Haya Lorberboum-Galski

Invention: Mr. Arie Dagan
Mr. Moran Farhi

Kaye Winners 2007

Inventor: PROF DANI ZAMIR
Invention: Smith Institute of Plant Sciences and Genetics in Agriculture
Faculty of Agricultural, Food and Environmental Quality Sciences

Invention: PROF MEIR BIALER and PROF BORIS YAGEN
Invention: Design and Development of a New Drug with Enantioselective CNS Activities – Propylisopropyl Acetamide (PID)

Invention: PROF LEON JOSKOWICZ
School of Engineering and Computer Science, Faculty of Science

Invention: MR YANIV LINDE
Student of Prof Chaim Golon, Department of Organic Chemistry, Faculty of Science

Invention: MR EREZ POODY
Student of Prof. Hermona Soreq, Department of Biological Chemistry, Faculty of Science

Invention: MR MORAN FARHI
Student of Prof. Alexander Vainstein and Dr. Haga Abielovich

Invention: MR YUVAL AVNIR
Student of Prof. Yechiel Barenholz, Department of Biochemistry, Faculty of Medicine

Kaye Winners 2006

Inventor: DR YONATAN ELKIND
Invention: Smith Institute of Plant Sciences and Genetics in Agriculture
Faculty of Agricultural, Food and Environmental Quality Sciences

Invention: PROF ELKA TOUIOU
Invention: Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine

Invention: PROF MOSHE KOTLER
Invention: Department of Pathology, Faculty of Medicine

Invention: PROF MEIR BIALER and PROF BORIS YAGEN
Invention: Design and Development of Valnoctamide: A New Drug with Stereoselective CNS Activities

Invention: MR YEHOSHUA MAOR
Student of Prof Raphael Mechoulam, Department of Medicinal Chemistry and Natural Products, School of Pharmacy, Faculty of Medicine

Invention: MR NIR QIVI
Student of Prof. Shachar Sharon, Department of Organic Chemistry, Faculty of Science

Invention: MS KHULOUD TAKROURI
Student of Prof. Morra Srebnik, Department of Medicinal Chemistry and Natural Products, School of Pharmacy, Faculty of Medicine

Invention: Student of Prof. Yechiel Barenholz, Department of Biochemistry, Faculty of Medicine

Invention: Liposomal Glucocorticoids for Treating Inflammatory States

Invention: Mr. Yuval Avnir
Mr. Yuval Avnir

Invention: Mr. Yonatan Elkind
Mr. Yonatan Elkind
Kaye Winners 2005

Inventor: PROF SHLOMO MAGDASSI and DR YELENA VINETSKY
Invention: Ceramic Ink Jets for Digital Printing on Glass

Inventor: DR ZEHAVA UNI
Invention: 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
Invention: Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine
Invention: Cationic Emulsions for Ophthalmic Drug Delivery

Inventor: PROF URI BANIN
Invention: 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
Invention: Student of Prof. Uri Banin
Invention: Semiconductor Nanocrystals with Conductive Zone

Inventor: MR ADIEL JABBOUR
Invention: Student of Prof. Doron Steinberg and Prof. Morris Srebnik
Invention: 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
Invention: 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
Invention: Student of Prof. Elan Colden and Dr. Eitan Israel, Faculty of Medicine
Invention: GourMed – Cooking School that Will Develop Recipes and Run a Course for People with Dietary Limitations due to Chronic Diseases

Inventor: STAFF OF PROF. MICHA WEISS
Invention: 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
Invention: School of Engineering and Computer Science, Faculty of Science
Invention: Monocular Visual Processing for On-board Driving Assistance

Inventor: PROF ITAMAR WILNER DR EUGENII KATZ
Invention: DR FERNANDO PATOLSKY and MR YOSSI WEIZMANN
Invention: 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

Inventor: PROF MICHAEL FRIEDMAN and PROF AMNON KOHN
Invention: Department of Pharmaceutics, School of Pharmacy, Faculty of Medicine
Invention: Novel Gastro-retentive Dosage Form (GRDF) – A Means for Sustained Administration of Drugs with Narrow Absorption Window at the Upper Gastrointestinal Tract

Inventor: MR AVIRAM SPERNATH and MS IDIT YULI-AMAR
Invention: Students of Prof. Nosim Garti, Caasali Institute of Applied Chemistry, Faculty of Science
Invention: New Nanorized Vehicles for Triggering and Targeting of Phytochemicals

Inventor: MS AVITAL TORRES-KERNER
Invention: 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 Cyanobacteria

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

Inventor: MR TAREQ JUBETH
Invention: Student of Prof. Abram Ribstein and Prof. Yechiel Barenholz, Departments of Pharmaceutics and Biochemistry, Faculty of Medicine
Invention: Targeting the Intestinal Mucosa by Charged Liposomes

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

Dr. Oded Shoseyov. Department of Plant Pathology and Microbiology, Faculty of Agricultural, Food and Environmental Quality Sciences. Faculty of Agricultural, Food and Environmental Quality Sciences. Development of Exelon: A Drug for the Treatment of Alzheimer's Disease (AD). 2005.

Dr. Oded Shoseyov. Department of Plant Pathology and Microbiology, Faculty of Agricultural, Food and Environmental Quality Sciences. Faculty of Agricultural, Food and Environmental Quality Sciences. Development of Exelon: A Drug for the Treatment of Alzheimer's Disease (AD). 2005.


Mr. Gadi Turgeon. Bone Gene Therapy and Molecular Pathology Laboratory, Faculty of Dental Medicine. The Reciprocal Differentiation System, Controlling the Level of BMP2 Expression. 2001.

Mr. Reuvan Amar. Computer Authority, Mount Scopus. HU-DAP Hebrew University Data Analysis Package. 2012.

Mr. Meir Glick. Department of Medicinal Chemistry, School of Pharmacy, Faculty of Medicine. Novel Stochastic Algorithm for Use in Life Sciences, Physics, Telecommunications and Economics. 2007.

Mr. Gil Ronen. Department of Genetics, Silberman Institute of Life Sciences, Faculty of Science. Novel Plant Gene “B” and Methods to Genetically Manipulate Color Formation in Plants. 2002.


Kaye Winners 2000

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

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

Inventor: PROF AVNER ADIN and DR. NICOLAI VESCAN
Invention: Division of Environmental Sciences, School of Applied Science, Faculty of Science. “Electro-Flocculation” for Water Treatment and Reuse.

Inventor: DR. BARUCH SCHWARZ
Invention: The “Kishurim Project”.

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

Kaye Winners 2001

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

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

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

Inventor: DR. ANDREW SHIPWAY

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

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

Inventor: MS. MIRIAM V. KOTT-GUTKOWSKI
Invention: Silberman Institute of Life Sciences, Faculty of Science. MONTI: In Vitro Kit Measure and Select Effective Multi-drug Resistance Blocker.

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

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

Kaye Winners 1999

Inventor: DR. ODED SHOSEYOV
Invention: Department of Plant Pathology and Microbiology, Faculty of Agricultural, Food and Environmental Quality Sciences. Development of Exelon: A Drug for the Treatment of Alzheimer’s Disease (AD).

Inventor: PROF ELSHIA TEL-OR
Invention: Department of Agricultural Botany and Otto Warburg Center for Biotechnology in Agriculture. Novel Stochastic Algorithm for Use in Life Sciences, Physics, Telecommunications and Economics.

Inventor: PROF HERMONA SOREN
Invention: Department of Biological Chemistry, Faculty of Science. Novel Stochastic Algorithm for Use in Life Sciences, Physics, Telecommunications and Economics.

Inventor: MR. YARON BEN-ETZION

Inventor: MS. CHAVA SPRUCH

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

Inventor: MR. GADI TURGEAN
Invention: Bone Gene Therapy and Molecular Pathology Laboratory, Faculty of Dental Medicine. The Reciprocal Differentiation System, Controlling the Level of BMP2 Expression.
Kaye Winners 1998

Inventor: PROF ITAMAR WILLNER
Invention: Layered Electrically-Contacted Enzyme-Electrode Assemblies for Electrochemical and Piezoelectrical Biosensors and Immunosensor Devices

Inventors: PROF NISSIM GARTI
Faculty of Medicine
Invention:

Inventor: 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 ASAFA ZUCK
School of Applied Science, Faculty of Science
Invention: Polycrystalline Hg 12 X-Ray Detector Plates for Digital Radiology

Inventor: PROF DAVID AVNIR
Institute of Chemistry, Faculty of Science
Invention: Development of Biosensor and Immunosensor Devices

Inventor: PROF SERGEI BRAUN
Silberman Institute of Life Sciences, Faculty of Science
Invention: Development of New Emulsifiers

Inventor: PROF OVAADIA LEV
Division of Environmental Sciences, Faculty of Science
Invention: Hydrocolloid Coatings for Food and Agricultural Products

Inventor: PROF MICHAEL OTTOLENGHI
Institute of Chemistry, Faculty of Science
Invention: Development of Long Shelf-life Tomatoes

Inventor: MR GALEN MARQUIS
Invention: Development of Membrane Vesicles of E. coli as a Potent Non-toxic Vaccine Against Colibacillosis in Poultry

Inventors: PROF JOSEPH HIRSCHBERG
Silberman Institute of Life Sciences, Faculty of Science
Invention: Genetic Engineering of Aspergillus niger in Transgenic Plants

Inventor: MR AMIR ZUKER
Kennedy-Leigh Centre for Horticultural Research, Faculty of Agriculture
Invention: Fire-resistant Hydraulic Fluids

Inventors: MR RAFAEL BEN-ZVI
School of Applied Science, Faculty of Science
Invention: Fire-resistant Hydraulic Fluids

Kaye Winners 1996

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

Inventor: PROF ABRAHAM SZTEINBERG
Invention: Department of Plant Pathology and Microbiology, Faculty of Agriculture
Invention: AGD: A Novel Biofungicide for the Control of Plant Diseases

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

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

Inventor: MR MICHAEL HOICHMAN
Invention: Computer Programmer, Faculty of Medicine
Invention: The “Mastris” 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
Invention: Bone Lakrotanty Faculty of Dental Medicine
Invention: Osteogenic Growth Peptide (OGP)

Inventor: PROF NISSIM GARTI
Invention: Department of Chemical Engineering, Tel Aviv University
Invention: New Emulsifiers

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

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

Kaye Winners 1994

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

Inventor: MR DUDU RASHTY
Invention: The Hebrew University Information Retrieval System
Invention: Development of a New Anti-Parkinson’s Drug

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