

List of DIP Projects

Results of the 1st Call - 1998

- Project DIP-2.3: Quantum electronics in low-dimensional systems Principal Investigators: Prof. Yigal Meir, Department of Physics, Ben-Gurion University of the Negev, Beer-Sheva Prof. Klaus v. Klitzing, Max-PlanckInstitut für Festkörperforschung, Stuttgart
- Project DIP- 3.1 Structure-function studies of ion-coupled transporters Principal Investigators: I: Prof. S. Schuldiner, The Institute of Life Sciences, The Hebrew University, Jerusalem D: Prof. Hartmut Michel, Max-Planck-Institut für Biophysik, Abt. Molekulare Membranbiologie, Frankfurt/Main
- Project DIP-5.2 Novel tribological strategies: from the nano- to meso-scales Principal Investigators: Prof. Joseph Klafter, School of Chemistry, Tel Aviv University, Tel Aviv Prof. Dr. Kurt Binder, Institut für Physik, Universität Mainz, Mainz
- Project DIP-7.1 Spectroscopy and dynamics of cooled and stored molecular ions Principal Investigators: Prof. Daniel Zajfman, Dept. of Particle Physics, Weizmann Institute of Science, Rehovot Prof. Dirk Schwalm, Max-PlanckInstitut für Kernphysik, Heidelberg

Results of the 2nd Call - 1999

- [Project DIP-A 1.3](#) Building nanostructured devices by controlled assembly of monomers, polymers and nanoparticles Principal Investigators: Prof. Chaim Sukenik, Department of Chemistry, Fac. of Natural Science, Bar-Ilan University, Ramat Gan Prof. Martin Möller, Organische Chemie II, Makromolekulare Chemie, Universität Ulm
- [Project DIP-A 6.2](#) Broadband laser intersatellite link for microsatellites Principal Investigators: Prof. M. Guelman, Âsher Space Research Institute, Technion Haifa Prof. H. Michalik, Inst. f. Aerospace-Technologie, Hochschule Bremen
- [Project DIP-A 6.3](#) Cellular regulation via the ubiquitin proteasome pathway in health and disease Principal Investigators: Prof. Aaron Ciechanover, Dept. Biochemistry, Fac. Medicine, Technion Haifa Prof. Dieter H. Wolf, Institut für Biochemie, Universität Stuttgart

Results of the 3rd Call - 2000

- [Project DIP- B 2.1](#) Formation of aerosols and gaseous inhomogeneties in industrial and atmospheric turbulent flows: theoretical and experimental investigations Principal Investigators: Prof. Tov Elperin, Department of Mechanical Engineering, Ben-Gurion University of the Negev, Beer-Sheva Prof. Gerd Grünefeld, RWTH Aachen
- [Project DIP-B 4.3](#) Utilization of wild cereal germ-plasm from the Israeli Center of Diversity for Wheat and Barley Improvement: mapping, cloning and transformation of disease and drought resistance genes into elite cultivars Principal Investigators: Prof. Eviatar Nevo, Inst. of Evolution, University of Haifa Dr. Marion Röder, Inst. für Pflanzengenetik und Kulturpflanzenforschung, Gatersleben
- [Project DIP-B 5.2](#) Magnetic resonance imaging advanced technologies in medical and material sciences Principal Investigators: Prof. Gil Navon, Dept. of Physical Chemistry, Tel Aviv University Prof. Bernhard Blümich, RWTH Aachen
- [Project DIP-B 7.1](#) Unravelling of the interrelationship between apoptotic pathway in physiological and pathological processes Principal Investigators: I: Prof. Varda Rotter, Dept. of Molecular Cell Biology, Weizmann Institut of Science, Rehovot D: Prof. Krammer, DKFZ Heidelberg

Results of the 4th Call - 2001

- Project DIP-C 1.2 Early detection of and intervention for Schizophrenia in adolescents Principal Investigators: Prof. J. Rabinowitz , School of Social Work, Bar-Ilan University, Ramat Gan Prof. J. Klosterkötter, Klinik für Psychiatrie und Psychotherapie, Köln
- [Project DIP-C 4.1](#) The impact of social and cultural adaptation of juvenile immigrants from the former Soviet Union in Israel and Germany on delinquency and deviant behavior Principal Investigators: Prof. Gideon Fishman, The Minerva Center for Youth Studies, University of Haifa Prof. Rainer Silbereisen, Dept. of Developmental Psychology, Universität Jena, <http://www.uni-jena.de/svw/devpsy/>
- [Project DIP-C 7.1](#) Coherence, disorder and interactions in coupled mesoscopic systems Principal Investigators: Prof. Yoseph Imry, Dept. of Condensed Matter Physics, The Weizmann Institute of Science, Rehovot Prof. Jörg Kotthaus, Center for NanoScience (CeNS), Sektion Physik München , Universität München <http://www.nano.physik.uni-muenchen.de/>
- [Project DIP-C 7.2](#) Investigation of plasma under pulsed energy deposition Principal Investigators: I: Prof. Yitzhak Maron, The Weizmann Institute of Science, Rehovot D: Prof. Dieter H.H. Hoffmann, Technische Universität Darmstadt <http://www-aix.gsi.de/~plasma/people/DHH-Hoffmann.html>

Results of the 5th Call - 2002

- [Project DIP-D 3.1](#) Functional Nanoparticle Architectures Principal

Investigators: Prof. Dr. Itamar Willner, Institute of Chemistry, Hebrew University of Jerusalem, Prof. Dr. Dieter Fenske, Institut für Anorganische Chemie, Universität Karlsruhe <http://ak-fenske.chemie.uni-karlsruhe.de/>

- [Project DIP-D3.2](#) Models and Experiments towards Adaptive Control of Motor Prostheses
Principal Investigators: Prof. Dr. Eilon Vaadia, Dept. of Physiology, Hebrew University of Jerusalem Prof. Dr. Ad Aertsen, Institut für Biologie III, Albert-Ludwig-Universität Freiburg
- [Project DIP-D 4.2](#) Metacognition: A window to the Conscious and Unconscious Determinants of Behavior Prof. Dr. Asher Koriat, The MaxWertheimer Minerva Center for Cognitive Processes and Human Performance, University of Haifa, Prof. Dr. Herbert Bless, Fakultät für Sozialwissenschaften, Universität Mannheim

Results of the 6th Call - 2003

- [DIP-E 3.1](#) Genetic and Metabolic Networks Regulating the Nutritional Value of Fruits Prof. Dr. Shmuel Wolf, Inst. f. Plant Science, Hebrew University Jerusalem/Prof. Dr. Lothar Willmitzer, MPI für Molekulare Pflanzenphysiologie, Golm
- [DIP E 6.1](#) Ensembles of interacting solitons, Prof. Dr. Mordechai Segev, Physics Department, Technion Haifa/Prof. Fedor M. Mitschke, Fachbereich Physik Universität Rostock
- DIP- E 7.1 (nicht verlinkt) Preparation for, and first analyses of the data of the ATLAS detector at the LHC, Prof. Giora Mikenberg, Dept. of Physics Weizmann-Institute of Science Prof. Gregor Herten, Universität Freiburg

Results of the 7th Call - 2004

- DIP F 1.2 (nicht verlinkt) Compositionality: Neuronal basis of complex behaviour, Prof. Moshe Abeles, Brain Research Institute, Bar-Ilan-University/ Prof. Theo Geisel, MPI für Strömungsforschung, Göttingen
- [DIP F.2.2](#) Quantum control of fermion atoms and molecules on atom chips, Prof. Ron Folman, Department of Physics, Ben-Gurion-University of the Negev/ Prof. Jörg Schmiedmayer, Physikalisches Institut, Universität Heidelberg
- [DIP F 5.1](#) Protein supercomplexes and networks that function in the biogenesis of mitochondria Dr. Abdussalam Azem, Faculty of Life Sciences, Tel Aviv University/ Prof. Walter Neupert, Institut f. physiologische Chemie, Universität München
- DIP F 6.2 (nicht verlinkt) Asymmetric catalysis, Prof. Ehud Keinan, Department of Chemistry, Technion Haifa/Prof. Walter Thiel, MPI für Kohlenforschung, Mühlheim

Results of the 8th Call - 2005

- Project DIP G 2.2 The role of intracellular IL-1a in health and disease: mechanisms of action and therapeutic applications
Principal Investigators: Prof. Ron-Nathan Apte, Department of Immunology and Microbiology, Ben-Gurion University / Prof. Dr. Michael Martin, Immunology FB08 - Biology and Chemistry, Justus-Liebig-University Giessen
- Project G 3.2 Alternative pre-mRNA splicing of ion channels: A fundamental mechanism underlying physiological plasticity and modulation of disease phenotypes, Principal Investigators: Prof. Batsheva Kerem, Life Sciences Institute, Hebrew University Jerusalem / Prof. Stefan Stamm, Institut für Biochemie, Universität Erlangen
- Project DIP-G 7.1 Directed Catalytic Functionalization of Unreactive Molecules
Principal Investigators: Ronny Neumann, Department of Organic Chemistry, Weizmann Institute, Rehovot / Carsten Bolm, Instiut für Organische Chemie, RWTH Aachen

Results of the 9th Call - 2006

- Project DIP H 2.1 Dynamics of Electrons and Collective Modes in Nanostructures; Principal Investigators: Prof. Doron Cohen, Department of Physics, Ben-Gurion University / Prof. Jan von Delft, Institut für Physik, Universität München
- Project DIP H.2.2 Structure and dynamics of integrin-mediated cell adhesion from phenotype to molecular level; Principal Investigators: Prof. Medalia Ohad, Department of Life Sciences and the NIBN, Ben-Gurion University/Prof. Reinhard Fässler, Max-Planck-Institut für Biochemie, Planegg-Martinsried Institut für Biochemie
- Project DIP H 3.1. Chemical-genetic platforms for the study of plant biology; Principal Investigators: Prof. Alon Samach, Faculty of Agriculture, Hebrew University Jerusalem/Prof. George Coupland, Max-Planck-Institut für Züchtungsforschung, Köln
- Project DIP H 5.2 Applications of string theory to particle physics and to gravity; Principal Investigators: Prof. Dr. Jacob Sonnenschein, School of Physics, Tel Aviv University / Prof. Stefan Theisen, Max-Planck-Institut für Gravitationsphysik, Potsdam

Results of the 10th Call - 2007

- Project DIP K 3.1 The use of advanced tracking technologies for the analysis of mobility in Alzheimer's disease and related cognitive diseases;
Principal Investigators: Dr. Noam Shoval, Department of Geography, the Hebrew University of Jerusalem / Prof. Dr. Hans-Werner Wahl, Zentrum für Alternsforschung, Ruprecht-Karls-Universität Heidelberg
- Project DIP K 5.1 Integrated in vivo, in vitro and in silico studies of protein misfolding diseases;
Principal Investigators: Dr. Gerardo Lederkremer, Department of Cell Research and Immunology, Tel Aviv University / Prof. Dr. Ulrich Hartl, Max-Planck-Institut für Biochemie
- Project DIP K 6.1 Semiconducting nanostructures as building blocks for future electronics - controlled growth and biological tools for their assembly and integration; Principal Investigators: Prof. Dr. Yeshayahu Lifshitz, Technion - Israel Institute of Technology / Prof. Dr. Ulrich Gösele; Max-Planck-Institut für Mikorstrukturphysik

Results of the 11th Call - 2008

- Bar Ilan University: Alternative Splicing: Evolution of Splicing Factors and their Complex Binding Specificity – Implications to Human Disease
- Tel Aviv University: Structure and Function of Kv7 Potassium Channel
Proteins: From X-Ray Crystal and NMR Structures to Human Disease
- Technion: A Search for New Cancer Drug Targets: The E4orf4 Network of Cancer Cell Specific Apoptosis
- Weizmann Institute: Quantum Phases of Ultra Cold Atoms in Optical Lattices

Results of the 12th Call - 2009

- Bar-Ilan University: Nanostructured hybrids of superconductors and ferromagnets
- Haifa University: Role of the hippocampal GABA system in the development of post-traumatic stress symptoms
- Tel Aviv University: Dynamics and Cosmological Evolution of Galaxies and Massive Black Holes

Results of the 13th Call - 2010

- Haifa University: The Roles of Protein Expression in Synaptic Stability and Memory Consolidation
- Tel Aviv University: Probing and Manipulating Biomolecules: From Single Molecules to an Ensemble
- Weizmann Institute: Genom-wide Transcriptional Programs Regulating Invasive Growth of Human Breast and Brain Cancer

Results of the 14th Call - 2011

- Hebrew University: Understanding lifetime tracks and fitness of long-distance avian migrants
- Tel Aviv University: Functional genomics and systems-level analysis of septicemic E.coli pathogenes
- Technion: Challenging the ubiquitin proteolytic signal – Novel modes of modification and recognition
- Weizmann Institute: Dynamic Nuclear polarization: Integrating fundamentals and new applications

Results of the 15th Call - 2012

- Bar-Ilan University: Decoding visual content and perception from neuronal population activity in visual cortex: VSDI, fMRI and computational modelling
- Hebrew University: Genomics of trait canalization in tomato
- Technion: Multifunctional Reactive Intermediates: Preparation, Characterization, Reactivity and Catalysis
- Weizmann Institute: Fundamental Studies on Disorder-Order Transitions Inspired by Biomineralization

Results of the 16th Call - 2013

- Ben-Gurion University: Solid-state nano-containers for triggered release of single molecules
- Haifa University: Ecological genomics: Analysis of gene expression underlying parallel habitat adaptation in distinct salamander species
- Hebrew University: Programmable molecular nanorobots for treatment of chronic pain and epilepsy
- Tel Aviv University: Biblia Arabica: The bible in Arabic among Jews, Christians and *Muslim*

Results of the 17th Call – 2014 (recommended for funding).

- Bar-Ilan University: Information consolidation: A new paradigm in knowledge search
- Ben-Gurion University: Optometabolic and molecular analysis of functional links between mitochondrial CA²⁺ signaling, gene regulation and metabolism in the brain
- Tel Aviv University: Science and applications of electron wave-functions shaped and manipulated by engineered nanoholograms
- Technion: Nanoengineered optobioelectronics with biomaterials and bioinspired assemblies

Results of the 18th Call – 2015

- Ben-Gurion University: Quantum phenomena in hybrid systems: Interfacing engineered materials and nanostructures with atomic systems
- Hebrew University: Spatial and temporal regulation of macromolecular complex formation in bacteria
- Technion: Structural and functional dynamics of Na⁺/H⁺ antiporters
- Weizmann Institute: Climate feedbacks and benefits of semi-arid forests (CLiFF)

Results of the 19th Call – 2016

- Haifa University: Scripta Qumranica Electronica: Dead Sea scrolls aggregated database and virtual research environment
- Hebrew University: Development of vision following late emergence from congenital blindness
- Technion: Quantum simulators: from photonic to atomic
- Technion: An integrated experimental-computational investigation of metabolic vulnerabilities in cellular senescence and post-senescent cancers

Results of the 20th Call – 2017

- Tel Aviv University: Atomic and molecular interstellar medium in high redshift star-forming galaxies.
- Weizmann Institute: MitoBalance: Uncovering the mechanisms underlying mitochondrial proteostasis

Results of the 21st Call – 2018

- Ben-Gurion University: Fundamentals of cooperation in modern communication networks
- Tel Aviv University: The epitranscriptome (m6A, m1A and Nm) in regulation of RNA fate

Results of the 22nd Call – 2019

- Ben-Gurion University: Chemical proteomics inside us: Using chemical tools to decipher coexistence between bacteria and humans.
- Technion: Quantitative reasoning about database queries

Results of the 23rd Call – 2020

- Ben-Gurion University: Unraveling the evolutionary, ecological and structural basis of microbial fiber degradation in nature
- Technion: Bright sources of quantum light for efficient entanglement distribution

Results of the 24rd Call – 2021

- Technion: The Neurobiology of Forgetting – Spontaneous Synaptic Remodelling, Cortical Representation Stability, Memory Retention and Behavioural Flexibility
- Tel Aviv University: MXene Based Energy Materials Guided by 3D AtomicResolution Tomography

Results of the 25th Call – 2022

- Bar-Ilan University: Magnetic van der Waals Heterostructures
- Ben Gurion University of the Negev: Holography and the Swampland: Constraints on theories of fundamental physics from compatibility with quantum gravity