

Curriculum Vitae

David Iluz

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1. Personal Data

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2. Higher Education

From-To	Name of Institution and Department	Area of Speciality	Degree
1987-1990	Bar-Ilan University (BIU), Ramat-Gan, Israel Dept. of Life Sciences and Dept of Israel Studies and Archaeology	Botany and Zoology	B.Sc.
1990-1991	Bar-Ilan University, Dept. of Life Sciences Ramat-Gan, Israel	Botany, Marine Ecology	M.Sc.
1992-1997	Bar-Ilan University, Faculty of Life Sciences, Ramat-Gan, Israel Supervisor: Prof. Zvy Dubinsky	Life Sciences, Marine Biology	Ph.D. <i>summa cum laude</i>
1998	Mofet Institute, Tel Aviv, Israel	Education	Teaching license
1999-2001	Post Doctoral fellowship at Hebrew University of Jerusalem, Dept. of Earth Sciences, Host: Prof. Boaz Luz, #Lazar 2008 (Items number 7 and 11 in the List of Publications resulted from this research)	Radioisotope Methods in Estimation of Primary Production in the Ocean	Postdoctoral fellow

C. Additional Studies

Dates	Course name	Institute
June-Aug. 1994	Ultraviolet Radiation and Coral Reefs Summer program and workshop	University of Manoa, Honolulu, Hawaii

March 1995	Practical Liquid Chromatography: Introduction to HPLC.	A training course by Dr. S. Levin and Dr. Y. Tabak, Jerusalem, Israel
Jan. 1996	Practical training in flow cytometry	Prof. Daniel Valout's lab, Rosscof, France
Aug. 2003	Practical training in microsensors in biofilms in Prof. Dirk De Beer's lab	Max Planck Institute, Bremen, Germany
June-Aug. 2004	Laboratory Safety Wardens	The Institute of Safety and Hygiene, Dept. of Life Sciences, BIU, Israel
Dec. 2010	Practical training in metabolic cell system for algae and corals, OxyPAM	Walz Company(Dr. Erhard Pfuendel and Dr. Rolf Gademann), Wageningen, Netherlands

3. Appointments: Academic Ranks and Tenure in Institutes of Higher Education

Dates	Name of Institution and Department	Position
1988-2000	Bar-Ilan University, The Youth Action Unit (guide for gifted children and seminars for high school students)	Guide, Teacher
1991-1996	Bar-Ilan University, Dept. of Life Sciences	Directory of Teaching Laboratories
1993-1999	Talpiot College, Department of Management Science	Lecturer
1995-1999	Beit Berl College, Environmental Sciences and Agriculture	Lecturer
2001-2008	Talpiot College, Department of Management Science Beit Berl College, Environmental Sciences and Agriculture	Lecturer with tenure
2001-present	Bar-Ilan University, Faculty of Life Sciences	Associate Researcher and Lecturer/Associate Instructor
2003-2013	Bar-Ilan University, Dept. of Israel Studies and Archaeology	Lecturer/Associate Instructor
2007-2010	Makor Ha' Mayanot College, Tour Guide Program	Lecturer

2007-2014	Bar-Ilan University, Dept. of Geography and Environment	Lecturer/Associate Instructor
2008-present	Bar-Ilan University, Faculty of Life Sciences, Center for Teaching Ecology Lab	Senior Lecturer and Research Assistant
2008-present	Talpiot College, Department of Management Science	Senior Lecturer with tenure
2010-present	Beit Berl College, Environmental Sciences and Agriculture	Senior Lecturer with tenure

4. Additional Functions/Tasks

Offices in Academic Administration

Dates	Name of Institution and Department	Position
1996-present	Talpiot College, Tour Committee	Chair
1996- 2016	Mofet Institute, Tour Coordinators Forum	Member of a central committee
2014-2015	Talpiot College, Remote Learning Leaders	Member
2012-2015	Talpiot College, Education for sustainability	Coordinator
2011-present	Beit Berl College, Department of Agriculture and Environmental Sciences	Head of Department
2008-present	Mofet Institute, Science Department Heads Forum	Member
2008-present	Talpiot College, Teaching Committee	Member
2008-present	Talpiot College, Department of Sciences	Head of Department
2008-present	Talpiot College, Library Committee	Member
2006-present	Bar-Ilan University, Faculty of Life Sciences	Laboratory Manager
2004-present	Talpiot College, Research Committee	Member
2015-present	Talpiot College, Advancement Committee	Member

6. Participation in Scientific Conferences

* Since Last Promotion

a. Active Participation

Date	Name of Conference	Place of Conference	Subject of Lecture/Discussion	Role
1989	ASLO/AGU Annual Meeting	New Orleans, USA	Microbial features of a quasi-permanent warm-core eddy in the eastern Mediterranean.	Lecture
1991	REEFLUX. Annual Meeting of the American Society of Limnology and Oceanography (ASLO)	The H. Steinitz Marine Biology Laboratory, Eilat	Nutrient fluxes between coral reefs and the open sea.	Lecture
1991	Symbiosis on the ecosystem level: International Symbiosis Congress	Jerusalem, Israel	1. The biogeochemical interactions of coral reefs with their adjacent sea. 2. The biogeochemical interactions of coral reefs with their adjacent sea. 3. Primary production in the northern Gulf of Eilat, Red Sea	Lecture
21-24.4. 1992	Symposium on Measurement of Primary Production from the Molecular to the Global Scale, International Council for the	La Rochelle, France	Primary production in the northern Gulf of Eilat, Red Sea, a case study for open-sea coral-reef interaction	Poster+ Lecture

	Exploration of the Sea,			
1995	The ecosystem of the Gulf of Aqaba in relation to the enhanced economic development and the peace process-II	IUI-Eilat, Israel	The biogeochemical interactions of coral reefs with their adjacent sea	Lecture
1996	6 th International Conference, Israel Society of Ecology and Environmental Sciences	Jerusalem, Israel	Seasonal reversal of cross shore gradients in the Northern Gulf of Aqaba, Red Sea	Lecture
16-19.3.1997	2 nd General Assembly of Red Sea Program	IUI-Eilat, Israel	Primary production in the Gulf of Eilat	Lecture
1998	The 2 nd Conference of the Federation of the Israeli Societies of Experimental Biology (FISEB)	IUI-Eilat, Israel	Underwater light field and phytoplankton distribution in the Gulf of Eilat	Poster
8-15.3.1998	3 rd General Assembly of the Multidisciplinary Regional Red Sea Program on Marine Science	Max Planck Institute, Bremen, Germany	Underwater light field and Primary production in the Gulf of Eilat	Lecture
8-15.3.1998	3 rd General Assembly of the Multidisciplinary Regional Red Sea Program on Marine Science	Max Planck Institute, Bremen, Germany	Seasonal patterns of phytoplankton primary productivity in the Gulf of Aqaba. Quantum yield of phytoplankton populations in the oligotrophic waters of the Red Sea	Poster Poster
1999	CARESS 99, 2 nd Annual Conference on Active Research by Environmental Sciences Students	Weizmann Institute of Science, Rehovot, Israel	Seasonality of primary production in the northern Gulf of Eilat, Red Sea	Lecture

17.3. 1999	Poster day, 1 st Annual Meeting	Faculty of Life Sciences, BIU, Israel	1. Bio-optical in situ method for the estimation of phytoplankton concentration in the Gulf of Aqaba (Eilat) 2. The plankton pigment algorithm in the northern Gulf of Eilat	Poster Poster
1999	CARESS 99, Second Annual Conference on Active Research by Environmental Sciences Students	Weizmann Institute of Science, Rehovot, Israel	Estimation of phytoplankton chlorophyll concentration in the Gulf of Aqaba (Eilat) by spectral bio-optical methods	Lecture
2000	9 th International Coral Reef Symposium	Bali, Indonesia	Tentacle expansion behaviour of stony corals suggests a link to photosynthesis of its symbionts with relation to zooxanthellae densities	Lecture
2000	The Annual Conference for Environmental Education in the School System	Beit Berl College, Israel	Environmental education in the education system - scientific and educational aspects	Chair
2001	33 rd Anniversary Conference of the Interuniversity Institute for Marine Sciences	IUI-Eilat, Israel	1. Open sea – coral reef interactions 2. Adaptation of an algorithm for chlorophyll, estimation by optical data in the oligotrophic Gulf of Eilat 3. Nutrients and oxygen dynamics in the water column of the Gulf of Aqaba, Eilat 4. Long-term productivity increase in the Gulf	Lecture

			of Eilat – Aqaba based on ¹⁴ C data 5. Primary production of the Gulf of Aqaba based on O ₂ isotopes	
10-12.7.2002	Tropical Temperate Interactions. Meeting of the Australian Marine Sciences Association	Fremantle, Western Australia	Can coral reefs and mariculture coexist? A case study in the northern Gulf of Eilat (Aqaba), Red Sea	Lecture
2003	The Red Sea Marine Peace Park Conference	IUI-Eilat, Israel	Phytoplankton as trophic status indication	Lecture
6-11.4.2003	Geophysics Res. EGS - AGU - EUG Joint Assembly, 2003	Nice, France	Eutrophication processes in the Gulf of Eilat (Aqaba), Red Sea, and their effects on the coral reef ecosystem	Lecture
Jan. 2004	Congress of the Israeli Meteorology Society	Volcani Institute, Beit Dagan, Israel	The oasis effect in his expression an extremely hot and arid climate: The case of southern Israel	Lecture
2004	ASLO/TOS Ocean Research Conference	Manoa University, Honolulu, Hawaii	A review of chlorophyll concentration in the Gulf of Eilat (Aqaba) open waters by in situ monitoring and remote sensing derived data from the past two decades	Lecture
2004	Ocean Research Conference	BIU, Ramat-Gan, Israel	1.Recent environmental changes in the chemical-biological oceanography of the northern Gulf of Eilat (Aqaba) 2. A review of chlorophyll a concentration in the Gulf of Eilat	Lecture

			(Aqaba) open waters by in situ monitoring and remote sensing derived data from the past two decades	
2005	ASLO 2005 Summer Meeting, - A Pilgrimage Through Global Aquatic Sciences	Santiago de Compostela, Spain	Recent eutrophication processes caused by caged fish farming in the northern Gulf of Eilat (Aqaba)	Lecture
2.5.2005	The Israeli Association of Aquatic Studies, The 2 nd Annual Conference	Bar-Ilan University, Ramat-Gan	The temperature effect and light intensities on biofilms of epilithic algae from Lake Kinneret	Poster
30.5-1.6. 2005	Israel Society for Ecology and Environmental Quality Sciences	Weizmann Institute of Science, Rehovot	1. The Lake Kinneret epilithon: ecophysiology and function in the ecosystem 2. The influence of varying pH on the nitrogen-fixing cyanobacterium <i>Trichodesmium</i> sp. IMS101 3. Influence of manmade oasis on microclimate conditions in the desert environment, the case of the Arava Valley, southern Israel	Poster Poster Poster
2005	The Israeli Association of Aquatic Studies, 2 nd Annual Conference	Bar-Ilan University, Ramat-Gan	Long term changes of nutrients in the northern Gulf of Eilat (Aqaba)	Lecture
23.3.2005	Congress of the Israeli Meteorology Society	Volcani Institute, Beit Dagan, Israel	The oasis effect in an extremely hot and arid climate in the Arava, Israel	Lecture
.5.2005	International Conference of the Israel Society for Ecology and	Weizmann Institute of Science, Israel	The influence of varying pH on the nitrogen-fixing cyanobacterium	Lecture

	Environmental Quality Sciences		Trichodesmium sp. IMS101	
2006	The 6 th International Conference on Urban Climate	Gothenburg, Sweden	Seasonal behavior of a manmade oasis in an extremely hot, dry climate	Lecture
10.4.2006	Poster exhibition, The Mina & Everard Goodman Faculty of Life Sciences	BIU, Ramat-Gan, Israel	The scarlet dye of the Holy Land	Poster
2006	The Israeli Association of Aquatic Sciences, 3 rd Annual Conference	Lake Kinneret (Sea of Galilee) Israel	The effects of nutrients and heavy metals on the intertidal macroalgal vegetation, along Israel's Mediterranean shores	Poster
31.3. 2007	Conference in memory of Prof. Y. Felix	BIU, Ramat-Gan, Israel	Innovation in research of <i>Tola'at hashany</i>	Lecture
2007	The Israeli Association of Aquatic Sciences, 4 th Annual Conference	Kfar Maccabiah, Ramat-Gan, Israel	A new Lessepsian macroalga, <i>Galaxaura rugosa</i> , gains control on underwater rocks in the western edges of Haifa Bay infralittoral zone	Poster
11.12. 2007	Meeting of the Israel Association for Veterinary Microbiology and Immunology	Volcani Institute, Beit Dagan, Israel	Application of <i>Pseudomonas aeruginosa</i> and <i>Cromobacterium violaceum</i> lectins in a comparative study of several mammalian milk glycan repertoires and their antipathogen adhesion potential	Lecture
2008	The Israeli Association of Aquatic Sciences, 5 th Annual Conference	Aquatic Sciences School, Michmoret, Israel	1. The mysterious disappearance of <i>Halimeda tuna</i> from the Intertidal zone along the Israeli Mediterranean.	Poster Poster

			2. Dust influence on algae culture physiology	
*19.6. 2008	The 18th Conference of Judea and Samaria Research	The University Center, Ariel, Israel	Indigo production in Ein Boqeq	Lecture
*15-16.4. 2008	The 34 th Archaeological Conference in Israel	Avihai, Jerusalem, Israel	Dyes from vegetation in the Roman period in light of the antique textiles exposed in Mo'a	Lecture
*7.1. 2008	The Biblical Crops Society of Israel	BIU, Ramat-Gan, Israel	Industry apparatus in Ein Boqeq; Is it for perfume or factory for Indigo production?	Lecture
*7.1. 2008	The Biblical Crops Society of Israel	BIU, Ramat-Gan, Israel	Dyes of plants in the Roman period in light of the antique textile dyes are exposed in Mo`a	Lecture
*3-6.12.2008	The Israel Association of Allergy and Clinical Immunology Annual Meeting	Inbal Hotel, Jerusalem, Israel	Curdling as a common denominator to allergenic milk types	Lecture
*2008	The Bat Sheba de Rothschild Seminar on Phytoplankton in The Physical Environments: The 15 th Workshop of the International Association of Phytoplankton Taxonomy and Ecology (IAP)	Ramot, Israel	Optical habitats of phytoplankton groups and their role in the ultraphytoplankton spring succession in the Gulf of Eilat	Lecture
*2008		Ben Gurion University	The climate effect of a manmade oasis during winter season in a hyper arid zone: The case of southern Israel	Lecture

*25-30.1.2009	ASLO 2009 Aquatic Sciences Meeting	Nice, France	Bio-optical daily changes during a mini-diatom bloom in the Gulf of Aqaba (Eilat)	Poster
*2.3.2009	The Israeli Association of Aquatic Sciences, 6 th Annual Conference	Kfar Maccabiah Hotel, Ramat-Gan, Israel	Optical habitats of phytoplankton groups and their role in the ultraphytoplankton spring succession in the Gulf of Eilat.	Poster
*30.3.2009	16 th Torah and Science Conference	BIU, Israel	Curdling of milk as a criterion for kashrut of animals in the Bible	Lecture
*1-5.1.2009	The 20 th CERF Biennial Conference	Portland Oregon, USA	A new red Lessepsian macroalga, <i>Galaxaura rugosa</i> , overtakes the infralittoral zone at the western edges of Haifa Bay (northern Israeli Mediterranean)	Poster
*13-14.5.2010	Ancient Roads	Sde Boker, Israel	Dyes from vegetation in the Roman period in light of the antique textiles exposed in Mo'a	Lecture
*20-21/6/2010	The 38 th Annual Conference of the Israel Society of Ecology and Environmental Sciences	Ben-Gurion University, Beer Sheva	Optical habitats of phytoplankton groups in the Gulf of Eilat (Aqaba), Northern Red Sea	Poster
*31.8.2010	11 th Conference, City of David: Studies of Ancient Jerusalem	City of David, Jerusalem, Israel	The afarcomon in land of Israel	Lecture
*11-12.4.2011	The Israeli Association for Aquatic Sciences, 8 th Annual Congress	Hadera Power Station, Israel	Pollution effects on the benthic intertidal algal flora along the Israeli Mediterranean shores	Lecture

*11-12.4. 2011	The Israeli Association for Aquatic Sciences, 8 th Annual Congress	Hadera Power Station, Israel	Underwater light field variation in high latitude coral reefs: a case study from the Gulf of Aqaba	Lecture
*27-28.6. 2011	The 39 th Conference of the Israel Society of Ecology & Environmental Sciences	Ein Hashofet, Megiddo, Israel	The impact of sewage discharge on intertidal algae diversity along the Israeli oligothropic Mediterranean	Lecture
*2012	The 9 th Annual Conference of the Israeli Association for Aquatic Sciences (IAAS)	Kinneret, Israel	Physiological changes in the algae <i>padina pavonica</i> at a polluted shore in midlittoral zone	Poster
*Sep. 2013	,	Tokyo University of Technology	Global climate change effects on coral reefs Dubinsky, Z., D. Iluz, O. Levy, S. Goffredo and G. Falini	Lecture
*13-14.3.2013	The 10 th Annual Conference of the Israeli Association for Aquatic Sciences (IAAS)	Michmoret Israel	The influence of ocean acidification on the physiology of the brown alga <i>Padina</i> (sp.) as a model of its effects on calcification processes	Poster
*13-14.3.2013	The 10 th Annual Conference of the Israeli Association for Aquatic Sciences (IAAS)	Michmoret, Israel	1. Effect of light fluctuation on photosynthesis and xanthophyll cycle in microalgae 2. Archaeological aspect of royal purple industry in the Mediterranean beaches	Lecture
*13.6. 2013	The 23 th Conference of Judea and Samaria Research	The University Center, Ariel	The Argaman textiles from M'orabaat caves	Lecture

*29.12.2013	<i>Petyl Thek'ehalet</i> Conference	Kfar Adomim	The Argaman textiles from M'orabaat caves	Lecture
*10.4.2014	The 40 th Archaeological Conference in Israel	Haifa University	Dyes identified in archaeological textiles from Judean Desert caves	Lecture
*22.4. 2014	The 11th Annual Conference of the Israeli Association for Aquatic Sciences (IAAS)	Peres Center for Peace	1. Ocean warming effects on zooxanthellate corals 2. Testing the potential impacts of climate change on rocky intertidal species - effects of temperature on the physiology of top shell snails.	Poster Poster
*12.6. 2014	The 24 th Conference of Judea and Samaria Research	The University Center, Ariel, Israel	The Argaman textiles from M'orabaat caves and other argaman sources were found in Judean Desert caves	Lecture
*31.10. 2014	The 2 nd International Workshop on Mesophotic Coral Reef Ecosystems. Red Sea, Eilat	IUI-Eilat, Israel	The light field in Gulf of Aqaba (Eilat) as influenced by spatial and seasonal dynamics and adverse events	Poster
* 29.2.2016	Light Pollution in Aquatic Environments Workshop. National Institute of Oceanography, Israel	Oceanographic and Limnological Research Tel-Shikmona, Haifa, Israel	1.Spatial distribution of light pollution in the Gulf of Eilat 2. Flickering photosynthesis	Lecture
*20.4. 2016	The 42 th Archaeological Conference in Israel	Tel-Aviv University, Israel	Evidence of early use of dyes from plants in Timna fabrics	Lecture
*20-21.6.2018	The Annual conference for Science and the Environment.	Weizmann institute of Science.	Light effects on the calcification and morphology of <i>Padina</i> sp.	Poster

	Challenges in Environmental Sciences: From local to global scales.			
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6b. Organization of Conferences or Sessions

Date	Name of Conference	Place of Conference	Subject of Conference /Role at Conference/Comments	Role
Mar. 2000	The 1 th Conference of Environmental Education;	Beit Berl College	Environmental education, dilemmas and challenges	Session chairman
*29.2.2016	Light Pollution in Aquatic Environments Workshop. National Institute of Oceanography, Israel	Oceanographic and Limnological Research, Tel-Shikmona, Haifa, Israel	Part of the joint project of the Ministry of Science, Technology & Space (with A. Lerner, IOLR, and C.-E. Haspel, Hebrew University)	Co-Organizer

c. Participation in International Workshops and Research Cruises

Date	Place	Name of Forum
11-12.9.1989	International Workshop GAP/IOLR cruise to the Cyprus Eddy in the Eastern Mediterranean (US-Israel)	The Group for Aquatic Primary Productivity. GAP-IOLR
21-26.11.1993	BSF-IUI Workshop, Eilat	Optical Properties & Quantum Yield of Aquatic Photosynthetic Systems
8/1994	East-West Center, University of Hawaii at Manoa, Honolulu, Hawaii	Workshop on Measurement of Ultraviolet in Tropical Coastal Ecosystems
2/1994	Research cruise in the Red Sea (Israel-Egypt)	Red Sea Program
Mar 1994	Research cruise with The Group for Aquatic Primary Productivity. GAP-IOLR, International Workshop in	East-west transects from Rosh Hanikra to Gaza and measurements from Kishon port to the open sea. Oceanographic,

	the Eastern Mediterranean (US-Israel)	underwater light field measurements and fisheries
Sep 1995	Research cruise with GAP-IOLR, International Workshop in the Eastern Mediterranean (US-Israel) transacts from Rosh Hanikra to Gaza	East-west transacts from Rosh Hanikra to Gaza and measurements from Kishon port to the open sea. Oceanographic, underwater light field measurements and fisheries
May 1995	Three-week research cruise in Eritrea	Oceanographic, coral reefs and fisheries
Oct 1994-Oct 1995	Monthly cruises in Lake Kinneret	In-situ monitoring of water quality on the basis of light properties and photosynthesis
14-22.7.1996	Red Sea	Joint Egyptian-German-Israeli research cruise in the Red Sea
Dec 1998	Alphones, Seychelles	Research cruise with Interuniversity Institute (IUI) in the Indian Ocean, Seychelles
9-17.9.1999	University of Zurich, Switzerland	The Group for Aquatic Primary Productivity (GAP99). 7 th International Workshop: Dynamics of primary production in spatially and temporally heterogeneous aquatic environments
Dec 2000	Workshop at Bar-Ilan University taught by Prof. A.E. Walsby, University of Bristol, UK	Calculating primary production and phytoplankton growth in natural waters
Apr 2001	Mid-term Review Committee Formal Meeting, Eilat, Israel. Joint International Presentations, Aqaba, Jordan	Red Sea Marine Peace Park Cooperative Research, Monitoring and Management Program (RSMPP)
*30.3-8.4.2008	The Group for Aquatic Primary Productivity (GAP-Eilat 2008) 8 th International Workshop International seminar and workshop, Eilat, Israel	Gross and Net Primary Production: Closing the Gap between Concepts and Measurements. Coordinator of the open sea group
*5-15.6.2012	Joint research - Bar-Ilan University (Israel) and Bologna University (Italy) in Panarea (Sicilia)	The effect of pH on corals and macroalgae physiology

d. Invited Lectures/Colloquium Talks

Date	Place of Lecture	Name of Forum	Presentation/Comments
May 1999	Dept. of Earth Sciences, The Hebrew University	The light field, phytoplankton pigmentation and productivity in the Gulf of Eilat	Colloquium Talk
2006	NATO - Belgic	NATO- SfP	Invited Lecture for proposal presentation
Jun 2007	IUI- Eilat, Israel	A research vessel project course: Underwater light field and primary production	Invited Lecture
*11-15.10.2009	Koret School of Veterinary Medicine, The Robert H. Smith faculty of Agriculture, Food and Environment, The Hebrew University of Jerusalem	ESHMOR WORKSHOP (New techniques in the study of interdisciplinary cultural heritage). Non-destructive methods to study pigments in textiles	Invited Lecture
*Oct 2010	Tal'a Bay Hotel, Aqaba, Jordan	Nato-SfP	Invited Lecture, summarize the Nato projects in the Red Sea
*Sep 2012	Talpiot College, Holon Faculty Evaluation Conference for the start of the academic year	Curdling milk as indicator for kosher mammals	Invited Lecture
*Apr 2013	Department of Archaeology and ANE Cultures, Tel Aviv University	Conservation of biodiversity in a modern development accelerated	Invited Lecture
*21.5.2013	Talpiot College, Holon Conference - Research in the	Thek'helet research as a case study for observing leading change	Invited Lecture

	College of Education		
*29.3.2015	Beit Berl College The 15 th Conference of Environmental Education; Sustainable, Pedagogy and Significant Education	Artificial aquatic pool as a model for out-of-class learning	Invited Lecture
*29.4.2015	Hebrew University - Hadassah Medical School, the History of Medicine	The Persimmon from Jericho and Ein-Gedi and its medicinal uses	Colloquium Talk
*3.4.2017	Beit Berl College The 17 th Conference of Environmental Education; The hot story of the world. The Climate Changes and us.	The future of coral reefs in light of the Climate Changes	Invited lecture
*30.4.2017	Faculty of life sciences, Bar Ilan University	Curdling milk as indicator for kosher mammals	Invited lecture
*20/2-1/3.2018	France Polynesia	A mission from Netanya college, Israel	Invited by the president and ministry of agriculture for advising on Aquaculture

7. Research Grants

7a. Grants Awarded

Role in Research	Collaboratores	Subject/ articles resulted from research	Funding source/ Amount	Period of grant
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PI		The Lake Kinneret epilithon: ecophysiology and function in the ecosystem Articles:	Beit Berl College, NIS 24,000	1999-2000
PI		The environmental and intrinsic controls of the tentacular expansion/contraction behavior of corals	Beit Berl College, NIS 12,000	2001
PI	D. Kadis, D. Goldman, O. Potchter	Oasis effect in Arava area	Beit Berl College, NIS 96,000	2003-2005
PI		Ancient textile pigments in Moaa	Kusichki Fund, NIS 3,000	2004
PI		The fish farm influence on the Gulf of Aqaba ecosystem	Mofet Institute, NIS 12,000	2004
PI		Primary production method for environmental pollution detection in the Gulf of Eilat	Beit Berl College, NIS 22,000	2004
PI		Development of a non-destructive method for identification of ancient textile pigments	Kusichki Fund, NIS 9,000	2005-2006
PI	N. Steinberg	Nitrogen content in road plants	Beit Berl College, NIS 12,000	2005
PI	D. Kadis, D. Goldman, O. Potchter	Student combination in research on oasis effect in arid zones	Mofet Institute, NIS 30,000	2006
PI		Non-destructive method for identifying antique textile dyes	Beit Berl College, NIS 24,000	2006-2007
PI	T. al Najjar (Jordan); D. Ediger (Turkey)	The protection of the Gulf of Aqaba from anthropogenic and natural stress during global climate change	NATO, Euro 264,000	*2007-2011

PI		Antique dye textiles from MOA site	Mofet Institute, NIS 12,000	*2008
PI		Biochemical methods to identify cereals	Kusichki Fund, NIS 3000	*2008
PI		Antique dyes textiles from MOA site	Kusichki Fund, NIS 3000	*2009
PI		Non-destructive method for identifying antique textiles dyes	Mofet Institute, NIS 12,000	*2009
PI		Antique dyes textiles from Bar Kochva caves	Kusichki Fund, NIS 3000	*2011
PI		Antioxidants in <i>Commiphora gileadensis</i>	Beit Berl College, NIS 25,000	*2013
Co-PI	Z. Dubinsky, J. Erez, Y. Mastai, D. Omri (BIU-Israel). S. Goffredo, G. Falini, Alma Mater Studiorum (Univ. of Bologna, Italy). J. Kaandorp (Univ. of Amsterdam, Netherlands)	Topical Team Proposal entitled Space bioreactor for marine mineralization material research (SpaceBioMat).	European Space Agency (ESA), Euro 20,000	*2014-2015
Co-PI	A. Lerner, IOLR, and C.-E. Haspel, Hebrew University	Penetration of light pollution from infrastructure installations into the ocean and its effect on animal vision and distribution	Ministry of Science, Technology & Space. NIS 660,000	*2014-2017
PI		Antioxidants in <i>Commiphora gileadensis</i>	Talpiot College, NIS 12000	*2015
PI	Banet Gabi (Arava Center)	Microalgae as a source of heat for biodiesel	Ministry of Energy and	*2016-2018

		production amateur: development processes and genetic improvement technology on productivity	Water, NIS 500,000	
PI	M. Zigman	Distance learning of science research lab	Talpiot College, NIS 17800	2017-2018
PI	Talpiot (R. Holtzblat), and Beit Berl College (D. Goldman)	Sustainability on Israel trail. "ישראל שביל על קיימות"	Ministry of Education. NIS 22,000	13-15.3.2108

b. Submission of Research Proposals – Pending

Role in Research	Co-Researchers	Topic	Funding Agency	Year
C0-PI	Zvy Dubinsky, BIU	Light and algae: a unique association in the Rosh HaNiqra cave	ISF	6/11/2018
PI	Amar Zohar (BIU) Sokenik Naama (Authority of Antiquity)	10,000 Years of color - Identification of Dyes from Archaeological Textiles from Neolithic Period until the Medieval Time in Israel	ISF	6/11/2018
PI	Banet Gabi (Arava Center)	באמצעים שימוש ביוטכנולוגים/גנטים פרופיל/כמות לשינוי באצות הליפידים	Ministry of Energy	10/2018
C0-PI	Zvy Dubinsky, BIU; Omry Dan	למעקב אוטונומית מערכת שינויים השפעת אחר יצורים על סביבתיים שימוש תוך ימיים כבירפורטרים באלמוגים סביבתיים	Ministry of Science	09/2018

g Submission of Research Proposals- Not Funded (Last 5 years)

When it includes many of co-researchers, only the institutes were mentioned

Role in Research	Co-Researchers (#Universities, Companies)	Topic	Funding Agency	Year
Co- PI	Z. Dubinsky (Israel), F. Al-Horani (Jordan)	Global Climate Change impacts on the Coral reefs of the Gulf of Aqaba (Red Sea)	MERC	2014
PI	G. Winter (The Dead Sea Arava Science Center); H.K. Schneider (Hebrew Univ.), N. Shashar (Ben Gurion Univ.),	CORALED: developing photosynthetic efficient and energy economical coral-specific LED array for coral aquarium systems	Ministry of Science, Technology & Space.	2014
CO- PI	S. Goffredo, Z. Dubinsky; J. Kaandorp; W.E.L.G. Müller; J. Erez; D. Omry; M. Trtilek, D. Iluz	Toward new materials by hyper/hypo-g biomineralization	H2020-FETOPEN-2015-2016-RIA	Jan 2014 Very good
PI	G. Banet (Arava Center) Z. Dubinsky (BIU)	Algae as a source for natural materials and biofuel	Ministry of Energy and Water	2014
PI	H. Carynelisa (HUJI); Z. Dubinsky (BIU)	Energy budget of phytoplankton photosynthesis: Maximizing gains and minimizing losses from light	ISF	Oct 2014

		absorption to biomass yields		
PI	D.I. Kline, B.G. Mitchell, A.E. Andrew (University of California, San Diego); Z. Dubinsky (BIU)	Underwater fluctuating light and photosynthesis: cellular mechanisms and ecological consequences	NSF-BSF	Feb 2015 Very good
CO- PI	S. Goffredo, Z. Dubinsky; J. Kaandorp; W.E.L.G. Müller; J. Erez; D. Omry; M. Trtilek, D. Iluz	Toward new materials by hyper/hypo-g biomineralization	H2020-FETOPEN-2014-2015-RIA	March 2015
PI	Z. Dubinsky (BIU); Space Pharma	Development of a flexible module designed for the maintenance, experimentation and monitoring of marine biomineralizing model organisms in space	Ministry of Science, Technology and Space	May 2015
CO- PI	G. Falini, E. Fabbri, P. Fantazzini, S. Mengoli, University of Bologna, Italy; Z. Dubinsky, D. Iluz, Y. Pinchasov, Bar-Ilan University, Israel; J. Kaandorp, University of Amsterdam, Netherlands.	ReefRisk, Proposal ID : 721574 (internal reference number: SEP-210321018)	Call : H2020-MSCA-ITN-2016	Dec. 2015
CO- PI	G. Falini, S. Fabbri, P. University of Bologna, Italy; Z. Dubinsky, D. Iluz, D. Omry, Bar-Ilan University, Israel; J. Kaandorp, University of	From genotype to phenotype: tracing the roadmap GenoPhen	ERC-FETOPEN	1/9/16 Grade:92

	Amsterdam, Netherlands.			
CO- PI		Algal-based Mediterranean aquaculture as a sustainable European socioeconomic growth engine.	SUSHI- DOME	1/5/16
PI	D.I. Kline, B.G. Mitchell, A.E. Andrew (University of California, San Diego); Z. Dubinsky (BIU)	Algal Mechanisms for coping with Underwater, Super Saturatinf Flashing Light	NSF-BSF	Jan. 2016
PI	Z. Dubinsky, D. Iluz (BIU); Dan (Afeka College)	Development of a flexible module designed for the maintenance, experimentation and monitoring of marine biomineralizing model organisms in space	Ministry of Science, Technology and Space	Aug. 2016
CO- PI	P.M.A. Sloot, Nanyang Technological University, Singapore Z. Dubinsky (BIU) J. Kaandorp (Amsterdam)	Reconstruction of the impact of climate change on the biomineralisatio n in scleractinian corals	NRF-ISF	Jan. 2016
PI	Z. Dubinsky (BIU); Omry Dan (Afeka College)	Development of a flexible module designed for the maintenance, experimentation and monitoring of marine biomineralizing model organisms in space	Ministry of Science, Technology and Space	Aug. 2016
CO- PI	University of Bologna, Italy;	ReefRisk, Proposal ID : 721574 (internal	Call : H2020- MSCA-ITN- 2016	Jan. 2017

	<p>Bar-Ilan University, Israel; University of Amsterdam, Netherlands; Oceanographic and Limnological Research, Israel; Climate Risk Analysis, Germany; University of Padova, Italy; Porifarma, Netherlands; University of Southampton, UK; Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research, Germany; Weizmann Institute of Science, Israel; Petar Kružić, University of Zagreb; American Association for the Advancement of Science, USA; BioScience Writers, USA; International Society for Reef Studies, UK; Case Western Reserve University, USA; Israel Ministry of Environmental Protection, Israel, Institute of Technology, Ireland</p>	reference number: SEP-210321018)		
CO- PI	<p>P.M.A. Sloot, Nanyang Technological University, Singapore Z. Dubinsky (BIU) J. Kaandorp (Amsterdam)</p>	Reconstruction of the impact of climate change on the biomineralisation in scleractinian corals	NRF-ISF	Jan. 2017
CO- PI	<p>Z. Dubinsky (BIU) J. Kaandorp (Amsterdam)</p>	Novel marine skeleton-based implants with capacity to cure injuries in the	NeuroScaffold	Apr. 2016

		brain and spinal cord		
CO-PI	Bar Ilan University, A4F ALGAFUEL SA, AIQuds University, ALGAELINK Azerbaijan State Oil and Industry University, Imperial College, PSI, University of Malaga, Beijing Forestry University, Bielefeld University, National Technical University of Athens, EUREC- The association of European renewable energy research centres	AlgaFuels: From hydrogen to biofuel using microalgae and CO ₂ : A dream come true	Call : H2020	Jan. 2017
Co-PI	Bar Ilan University (Dubinsky Z.,(PI) Omry D., Iluz D.) University of Bologna (S. Goffredo, G. Falini); University of Amsterdam (Kaandorp JA)	From genotype to phenotype: tracing the roadmap GenoPhen	ERC	8/2017
P-I	Zvy Dubinsky, BIU	Light and algae: a unique association in the Rosh HaNiqra cave	ISF	6/11/2017
CO-PI	Partners from universities and companies; BIU,UOA, PHYCO, MikroAlg, IMPERIAL, PRJ, ITG	792324 — APHRODITE. Sustainable and efficient bio-refinery for high valued products in the cosmetic, health and food industries based on algae	H2020-BBI-JTI	10.9.17

9. Scholarships, Awards and Prizes

Years	Scholarship
1999-2001	Hebrew University, two-year postdoctoral Meir Baum Fellowship

10. Teaching

a. Courses Taught in Recent Years

Abbreviations: Beit-Berl College (**BBC**), Bar-Ilan University (**BIU**), Talpiot College (**TC**)

Years	Name of Course	Type of Course Lecture/Seminar Workshop/High Learn Course/ Introductory Course (Mandatory)	Degree	Number of Student s	Institute
1993- presen t	Earth Sciences	Introductory Course	B.Ed.	25-30	TC
1993- presen t	General Botany and Zoology	Lecture	B.Ed.	25-30	TC

1995-present (every two years)	Campus (5 days): Energy flow in a desert ecosystem	Workshop	B.Ed.	16-20	BBC
1995-present (every two years)	Campus (5 days): The Gulf of Eilat ecosystem	Workshop	B.Ed.	16-20	BBC
1995-present	General Ecology	Introduction course	B.A., B.Ed.	25-30	(BIU), TC, BBC
1995-present	Introduction to Ecosystems	Lecture, High Learn course	B.Ed.	25-30	BBC
2006-2017	Soil Ecology	Lectures and laboratories	B.Ed.	20	BBC
2008-2011	Introduction to Life Sciences	Introduction course (mandatory)	B.Ed.	25-30	BBC
1998-2012	Didactic and disciplinary aspects in Israel areas	Educational tours	Summer program for B.Ed.	25-30	TC
1998-2000	Introduction to Botany and Zoology of Israel	Lectures and educational tours	B.Ed.	25-30	BBC
2009, 2011, 2013	Biogeography	High learn course	B.Ed.	25-30	TC
1998-present	Ecology laboratories	Lectures and laboratories	B.Sc.	80-100	Faculty of Life Sciences, BIU
2002	Ecology Aspects in Geography	Seminar	B.A.	25-30	Dept. of Geography, BIU
2003-2015	Israel Land Vegetation	Lectures and educational tours, high learn course	B.A.	25-30	Dept of Land of Israel Studies and

					Archaeology, BIU
2004, 2007	Ecology	Teleprocessing course	B.Ed.	25-30	BBC
2005-2016	General Botany	Lectures and laboratories	B.A.	25-30	Dept. of Land of Israel Studies and Archaeology, BIU (till 2013), TC
2005-present	Environmental Bioenergy	Lectures and laboratories	B.Ed.	15-20	BBC
2005, 2016	General Astronomy	Teleprocessing course	B.Ed.	25-30	TC
2006-2017	From Algae to High Plants	Lectures and laboratories	B.Ed.	25	TC
2006, 2013, 2015-18	Environments Issues in Israel	Teleprocessing course	B.Ed.	25-30	BBC, TC
2007-present	Out-of-class study	Workshop	B.Ed.	25	TC, BBC
2008-2011, 2017	Science Seminar	Seminar	B.Ed.	20	TC
2008-2015	Methods on Identifying and Monitoring Pollution	High Learn Course	B.Ed.	25-30	BBC
2008	Eretz Israel Ecosystems	Lecture	B.A.	25-30	Dept. of Geography, BIU
2009-2015	Usage and Utilities in Plants	Lecture and laboratories	B.Ed.	25-30	TC
2009-2014, 2016-17	The Ecology of Israel Vegetation	Lectures and educational tours, high learn course	B.A.	25-30	Dept. of Geography, BIU, TC

2008-present	The Blue Planet	Lecture	B.Ed.	25-30	BBC
2011	Introduction to Ecology	Lectures and educational tours	B.A.	25	Dept. of Geography, BIU
2011, 2013	Marine Ecology	High learn Course	B.Ed.	20	BBC
2013	Nature Issues in the Bible	Lectures and educational tours	B.Ed.	25	TC
2015, 16	Renewable Energy	Lectures	B.Ed.	25	TC
2016	Journey of Life	Introductory course	Students with special needs, special education	14	Issie Shapiro Institute
2016	Between Chemistry and Biology in Coral Reefs	Workshop	Ph.D.	15	Dept. of Chemistry, BIU
2017-present	Ecology garden studies	Workshop	B.Ed.	37	TC
2017-present	Ecology-	High learn Course	M-Teach	20	BBC

b. Supervision of Graduate Students (at Bar-Ilan University)

M.Sc. (BIU)

Name of Student	Title of Thesis	Date of Completion /in Progress
Sukenik, Naama	The antique textile dyes in M'oa	June 2007 (MA) (with excellence)

*Yamshon, Amir	The effect of dust on the bio-optical properties of the Gulf of Eilat (Aqaba) phytoplankton cultures	2009
*Dishon, Gal	Phytoplankton and underwater light interrelations in the Gulf of Eilat	2010 (with excellence)
*Tzubary, Yael	Pollution effect on the fauna in 4 macroalgae species	2014
*Bechor, Rotem	Strategies of acquiring and utilizing photosynthetic energy of light and shaded coral <i>Stylophora pistillata</i> and its implication on calcification	2014
*Hovav, Raaya	Pollution effect on the foraminifera species live on macroalgae	Oct 2014
*Klein, Lior	Effect of temperature on grazers in the littoral zone	Oct 2014
*Morad, Tsachi	Characterization of the meiobenthic communities in the intertidal zone of clean and polluted rocky shores in the Mediterranean Sea of Israel	Dec 2014
*Shebis, Yevgenia	Antioxidants in resin plants and microalgae	Dec 2014 (with excellence)
*Tamir Raz	The light field in the Gulf of Aqaba (Eilat), as influenced by spatial and seasonal dynamics	2015 (with excellence)
*Admoni, Hofit	Temperature effect on corals, symbiotic and non-symbiotic	Feb 2016
*Segman, Rotem	Ocean acidification impacts on calcifying macroalgae (<i>padina</i> sp.)	Nov. 2016
*Mizrahi, Noam	Spatial distribution of phytoplankton in the Northern Gulf of Eilat	Jan. 2017
*Mayer, Daniel	The effect of light on epiphytic algae in coastal caves	Jan. 2017
*Golan, Adva	Biodiversity of fauna in macro algae species using molecular tools	Oct. 2017
*Moshaiov, Moran	PH effect on corals, symbiotic and non-symbiotic	Writing thesis
*Gitkin, Marina	Energy pathways in the algae <i>Dunaliella salina</i>	Jun 2018
*Benitah, Miri	Environmental effect on the calcification and morphology of <i>Padina pavonica</i>	June 2017

*Kitov, Avital	Antioxidants in <i>Commiphora</i> species plants	Second year
*Weinstein Ben	Thermophilic microalgae as a source of heat for biodiesel production.	Second year
Refael Alina	Changes in the structure and functioning of coral reef as a function of depth.	Nov. 2018 (with excellence)
Gamliel Ohad	Culture of the thermophilic microalga <i>Micractinium</i> for valuable bio- products	First year
Avrahmovitz Idel	Purification of agricultural wastewaters using micro algae	First year
Hadar Yudkin	The cell size effect on photoacclimation process in microalgae	Second year
Ashfur Hamzi	light field characterization of coastal caves in Rosh H'nikra	First year

Ph.D (BIU)

Name of Student	Title of Thesis	Date of Completion/in Progress
*Hoffman, Razy	The effects of nutrients and heavy metals on the intertidal seaweed, along Israel's Mediterranean shores	June 2011
*Sukenik, Naama	Textiles dyes from Qmeran and Massada	June 2013 (with excellence)
*Abu-Ghosh, Said	The influence of fluctuating light on microalgae	June 2017 (with excellence)

Post-Doctoral Fellows (BIU)

Name of Student	Title of Thesis	Date of Completion /in Progress
*Ramot, Michal	The influence of ocean acidification on the physiology of the brown alga <i>Padina</i> (sp.) as a model of its effects on calcification processes	2010-2013

*Abu-Ghosh, Said	Optimization of lipid production in microalgae	2017-2019
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Supervision of Students in Advanced Laboratory Studies (BIU)

Name of Student	Title	Date of Completion
Dovchok, Rachel	Photoacclimation response of <i>Synechococcus</i> sp. Kinetic changes in photosynthetic parameters	1995
Keynan, Mirit	Photoacclimation response of <i>Cheatoceros</i> sp. Kinetic changes in photosynthetic parameters	1995
Cohen, Merav	Kinetic changes in photosynthetic parameters of <i>Dunalliella salina</i> , in three nutrient levels	1996
Yefrah, Erez	Effect of nutrient and light intensity on the alga <i>Isochrysis</i> sp.	1996
Levi, Anat	Kinetic changes in photosynthetic parameters of <i>Dunalliella salina</i> , in three growth conditions of light intensity	1996
Levav, Ganit	Correlation between methods (IMAGE PRO and FLOW CYTOMETER) on size and distribution of phytoplankton	1996
Pinto, Florence	Effect of nutrient and light intensity on the alga; <i>Emiliana huxleii</i>	1996
Yehoshua, Yaron	Changes in chlorophyll content and fluorescence by flow cytometry of <i>Dunalliella salina</i> , in three growth conditions of light intensities and nutrient levels	1996
Zvayg, Michal	Effect of nutrient and light intensity on the alga; <i>Cheatoceros</i> sp.	1996
Levi, Eli	Flow cytometry analysis of phytoplankton in the Gulf of Eilat coastal waters	2002
Shoham, David and Kraef, Ela	Nondestructive method for identifying antique textiles dyes	2005-2006
Tzubary, Yael	Flow cytometry analysis of phytoplankton and bacteria in the Gulf of Eilat	2007

*Alemkayes, Yair	Developing the method of <i>tek'helet</i> dying from <i>Sepia</i>	2008
*Leibovitz, Dov	Determination of amylase in cereals	2008
*Don, Margarita	Determination of Gluten in cereals	2008
*Yalao, Rina	Phytoliths in resins (with Steeve Weiner and Elizabeta Boareto, Weizmann Institute)	2009
*Tadela, Genet	Experiments on purple dye from murex	2010
*Levi, Yaara	Producing perfume from <i>Commiphora gileadensis</i>	2010
*Cohen, Adi	SEM analyses for elements identification in archaeology findings	
*Leg, Orly	Building dye standards for HPLC analyses	2011
*Klein, Lior	The effect of heavy metals on <i>Chondrophycus sp.</i>	2011
*Meir, Lian	Identification of s by flow cytometry	2012
*Goldstein Aviva	Temperature effect on the coral <i>Stylophora pistillata</i>	2012
*Marina	The effect of salinity on antioxidant activity in algae	2014
*Ben Amram, Nesly	The effect of high and low light on relaxation on algae using flow cytometry	2014
*Kitov, Avital	The amount of antioxidants in <i>Commiphora</i> species plants	2015
*Bitan, Sivan	Xanthophyll cycle in different microalgae	2015
*Sofer, Ela	Comparing the abiotic and biotic factors in the desert and in the coral reef ecosystems	2015
*Sela-Koah, Omer	The effect of light intensity on photoinhibition (chlorella sp.)	2015
*Oskar, Nofar	The effects of ocean acidification on coral calcification and physiology	2016
*Homsy, Jonny	The effect of UV exposure time on the physiology of chlorella sp.	2016
*Abo-Moah, Afif	The effect of UV exposure time on the physiology of <i>Dunaliella salina</i>	2016

*Sarfati, Shani	The influence of different light conditions of <i>Phaeodactylum tricornutum</i> .	2016
*Abed Al-Gafer, Mohamed	Spectral method for dye textile identification	2016
Peer Hila	Lichen activity rate after wetting	2016
Oren Loren,	The effect of light regime on algae movement	2017
Benbenishti Tzahi	Flow cytometry analyses of phytoplankton in the Gulf of Eilat, at different natural events.	2017
Laron Nataly	Flow cytometry analyses of phytoplankton in the Gulf of Eilat. Effect of artificial light.	2017

11. Miscellaneous

Selected Research Projects

Date	Project
1996-1998	Egyptian, German, Israeli & Palestinian Multidisciplinary Red Sea Program on Marine Science. Project A: Simultaneous estimation of marine primary productivity by biological, geochemical and remote sensing methods; the Gulf of Aqaba bloom experiment (GABE)
1999-2002	Peace Park project (RSMPP), Joint Jordanian, Israeli, and Palestinian project in the Gulf of Aqaba
1998-2003	US-AID Gulf of Aqaba Peace Park: Joint Israel-Jordan-Egypt-USA coral reef monitoring and conservation program
1999-2001	Red Sea Program (RSP), Ministry of Science and Technology, Germany (BMFT)
2002-2005	National Monitoring Project in the Gulf of Aqaba. Joint Jordan and Israel project
2003-2006	Oasis effect in Arava area (continuation of collaborative research with D. Kadish, D. Goldman and O. Potchter)
2004-2006	A research and educational plan in marine biogeochemical cycles: Nutrient dynamics and ecosystem structure in the Gulf of Aqaba – Physical forcing and external nutrient sources. Stanford University funding by NASA New Investigator Program (NIP)
*2007-2012	NATO grant for Israel-Jordan-Turkey collaboration project: The protection of the Gulf of Aqaba from anthropogenic and natural stress during global climate change

*2010-2015	CoralWarm, the European Research Council FP7-IDEAS Project: Corals and global warming: the Mediterranean versus the Red Sea
*2013-2015	A novel optical device for the culture of lipid-rich algae (with Carmel Rothschild and Zvy Dubinsky)
*2015-2017	Penetration of light pollution from infrastructure installations into the ocean and its effect on animal vision and distribution (with Amit Lerner, IOLR, and Caryn Elisa Haspel from the Hebrew University of Jerusalem)
*2016-2018	Microalgae as a source of heat for biodiesel production amateur: development processes and genetic improvement technology on productivity (with Gabi Banet, Arava Center)

12. Professional Experience

Development of Educational Learning Programs

Date	Name of program and participants	Institute
1995-present	Promoting college educational tours	Beit Berl College Talpiot College
1995-present	Intensive courses based on educational tours for teachers: Interdisciplinary aspects in regions of Israel	Talpiot College
1996-1998	The development of curriculum in the Department of Agriculture and Environmental Studies, and the promotion of academic recognition (with Dr. D. Kadish)	Beit Berl College
2002-present	Developing an environmental studies program with the Depts. of Geography and Land of Israel Studies (with Prof. Z. Amar)	Bar-Ilan University
2003-2004	Development of an environmental studies program with the Depts. of Geography and Land of Israel Studies (with Dr. D. Kadish and Dr. O. Potchter)	Beit Berl College
2003- 2015	Construction and teaching remote learning courses (Ecosphere, Environmental Issues, Astronomy, Geography and Ecological aspects)	Talpiot College Beit Berl College
2004-2005	Development of curricula for B.A. and B.Sc. degrees in Agriculture and	Beit Berl College

	Environmental Studies (with Dr. D. Goldman and Dr. D. Kadish)	
2005	Team partner in the Forum of the Mofet Institute for the promotion of field trips in the educational system following the Dovrat report	Mofet Institute
*2012-2015	Sustainable education program, Leading and assimilation of this program for all students in the college.	Talpiot College
*2014	A joint program with Dr. I. Amer from the Arab Institute for Combined Science and Environmental Sciences and Agriculture, for B.Ed. students	Beit Berl College
* 2015-present	Program for training teachers of agricultural youth villages in Beit Berl College, Department of Environmental Sciences and Agriculture (6 seminars)	Beit Berl College
* 2015-2017	Construction of undergraduate curriculum in science for the ultra-Orthodox sector. With Dr. B. Bashan	Talpiot College
*2015	Program of undergraduate curriculum in science for the ultra-Orthodox sector. With Dr. R. Israeli	Beit Berl College
*2015-16	Development of a study program: "Environmental Advisor", with Prof. O. Potchter, Dr. D. Goldman, Dr. A. Kartin and Prof. Y. Shnel - for BA students	Beit Berl College

Publications

Note: For joint publications, the order of the listed authors appears according to their relative contribution. The last in the list of authors is an equal contribution to the first author or second to first author

SJR; Q Impact Factor = IF; Ci= all citations minus self-citations

A. Ph.D. Dissertation

The light field, phytoplankton pigmentation and productivity in the Gulf of Eilat (1998), PhD thesis, Faculty of Life Sciences, Bar-Ilan University, Ramat-Gan, Israel, 170 pp (Hebrew). (Ci =12)

Supervisor: Prof. Zvy Dubinsky

Related publications: Iluz, 1998; Erez et al., 2000; Lazar et al., 2000; Lazar et al., 2008; Iluz et al., 2003; Iluz et al., 2008; Lazar et al., 2008

C. Scientific Books

*Almalem Ofer and **Iluz D.** (2018). *The reef keeper*; Guide for coral growth in enclosed aquariums. ("Tzameret" publishing)

C. Submitted - Scientific Books

*Sukenik N., Amar Z., and **Iluz D.** *Dye and textiles dying in Israel in the antique period* (Accepted by Yad Ben Zvi publishing)

D. Articles in Refereed Journals

D.1. Published

1. Leshem Y.Y., Haramaty E., **Iluz D.**, Malik Z., Sofer Y., Roitman L. and Leshem Y. (1997) Effect of stress nitric oxide (NO): Interaction between chlorophyll fluorescence, galactolipid fluidity and lipoxygenase activity. *Plant Biochemistry and Physiology* 35: 573-579. (Ranking =Q1; IF= 2.96; Ci=397)
2. Fisher T., Berner T., **Iluz D.** and Dubinsky Z. (1998) The kinetics of the photoacclimation response of *Nannochloropsis* sp. (Eustigmatophyceae): A study of changes in ultrastructure and PSU density. *Journal of Phycology* 34: 818-824. (Ranking = Q1; IF= 2.53; Ci= 48)
3. Erez J., Lazar B., **Iluz D.**, Alhatib M., Dry M., Nehorai A., Rivlin T., Stambler N. and Dubinsky Z. (2000) Nutrient enrichment in the Northern Gulf of Eilat and their influence on the ecosystem. *Ecology and Environment* 6: 119-121 (in Hebrew).
ודובינסקי צ., סטמבלר נ., ריבלין א., גהוראי א., דריי מ., אלחטיב מ., ד. אילוז, לזר ב., ארז, אקולוגיה. העשרה בנוטריינטים בצפון מפרץ אילת והשפעתם עם המערכת האקולוגית. (2000). *אקולוגיה*, 6:119-221
4. Lazar B., Erez J., **Iluz D.**, Al-Hatib M., Rivlin T., Dray M., Nehorai A., Stambler N. and Dubinsky Z. (2000) The effect of eutrophication process in the Northern Gulf of Eilat on its ecological systems. *Ecology and Environment* 6: 116-117 (in Hebrew).
ודובינסקי צ., סטמבלר נ., ריבלין א., גהוראי א., דריי מ., אלחטיב מ., ד. אילוז, לזר ב., ארז, אקולוגיה. השפעת תהליך האאוטרופיקציה על המערכת האקולוגית בצפון מפרץ אילת. (2000). *אקולוגיה*, 6:116-117
5. **Iluz D.**, Yosef, Z. and Gitelson A. (2003) Adaptation of an algorithm for chlorophyll. *International Journal of Remote Sensing* 24: 1157-1163. (Ranking= Q1; IF= 1.652; Ci=50)
6. Amar Z., Gotlieb H., Varshavsky L. and **Iluz D.** (2005) The scarlet dye of the Holy Land. *Bioscience* 55: 780-784. (Ranking = Q1; IF=5.44 ; Ci=7)
7. Hoffman R., Dubinsky Z., Israel A. and **Iluz D.** (2007) A new Lessepsian macroalga, *Galaxaura rugosa*, gains control on underwater rocks in the western edges of Haifa bay infralittoral zone. *Israel Journal of Ecology and Evolution* 53: 208-209. (Ranking= Q3; IF= 0.432; Ci=9)
8. *Hoffman R., Israel A., Lipkin Y., Dubinsky Z. and **Iluz D.** (2008) First record of two seaweeds from the Israeli Mediterranean *Galaxaura rugosa* (J Ellis and Solander) J.V. Lamouroux (Rhodophyta) and *Codium adhaerens* C. Agardh

- (Chlorophyta). *Israel Journal of Plant Sciences* 56: 123-126. (Ranking = Q3; IF=0.42; Ci=5)
9. ***Iluz D.**, Yehoshua Y. and Dubinsky Z. (2008) The quantum yields of phytoplankton photosynthesis in the Gulf of Aqaba (Eilat), Northern Red Sea. *Israel Journal of Plant Sciences* 56: 29-38. (Ranking= Q3; IF=0.42 ; Ci=5)
 10. *Yehoshua Y., Dubinsky Z., Gasith A., Berman T., Alster A. and **Iluz D.** (2008) The epilithic algal assemblages of Lake Kinneret, Israel. *Israel Journal of Plant Sciences* 56: 85-92. (Ranking= Q3; IF=0.42; Ci=3)
 11. ***Iluz D.** and Amar Z. (2008) 'Wall pellitory' as cleaning material for glass in medieval Israel. *Economic Botany* 62: 85-89. (Ranking = Q2; IF=2.06; Ci=1)
 12. *Potchter O., Goldman D., Kadish D. and **Iluz D.** (2008) The oasis effect in an extremely hot and arid climate: The case of southern Israel. *Journal of Arid Environments* //72: 1721–1733. DOI: 10.1016/j.jaridenv.2008.03.004. (Ranking =Q1; IF= 1.82; Ci=50)
 13. ***Iluz D.**, Vago R., Chadwick N.E., Hoffman R. and Dubinsky Z. (2008) Seychelles lagoon provides corals a refuge from bleaching. *Journal of Research Letters in Ecology*. Article ID 281038. (Ranking= Q3; IF= ;Ci=11)
 14. *Hoffman R., Dubinsky Z., Israel A. and **Iluz D.** (2008) The mysterious disappearance of *Halimeda tuna* from the intertidal zone along the Israeli Mediterranean. *Israel Journal of Ecology and Evolution* 54: 267-268. (Ranking= Q3; IF=0.432)
 15. ***Iluz D.** and Amar Z. (2009) Indigo production in En Boqeq. *Judea and Samaria Research Studies* 18: 223-231 (in Hebrew). (Ranking = Q4)
(אינדיגו)בשמייה או מפעל להפקת ניל :מתקן התעשייה בעין-בוקק. (2009). אילוז דוד ועמר זהר, 223-231. מחקר ייחודי ושומרון, קובץ יח, 223-231.
 16. *Amar Z., Merin U. and **Iluz D.** (2009) Curdling of milk as a criterion for kashrut of animals in the Bible. *Ba'da'd* 21: 75-94 (in Hebrew). (Ranking = Q4)
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 17. ***Iluz D.**, Dishon G., Capuzzo E., Meeder E., Astoreca R., Montecino V., Znachor P., Ediger D. and Marra J. (2009) Short-term variability in primary productivity during a wind-driven diatom bloom in the Gulf of Eilat (Aqaba). *Aquatic Microbial Ecology* 56: 205-215. (Ranking=Q1; IF= 1.90; Ci=15)
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D.2. Submitted articles

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- Abu-Ghosh S., Dubinsky Z., and **Iluz, D.** A study of acclimation to high light in diatoms using Lhcx1 knockouts. Submitted to *Journal of Algal Research*.
- Raphael A. Dubinsky Z., **Iluz D.**, Netanyahu N.S. Deep Neural Network Analysis of Coral Reefs. (Submitted to *L&O methods*).

D.3. in Preparation

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- **Iluz D.**, Erez J., Lazar B., and Dubinsky Z. Seasonal reversal of cross-shore productivity gradients in the Northern Gulf of Aqaba, Red Sea.
- Hoffman, R., **Iluz, D.**, Dubinsky, Z. and Israel, A. Pollution effects on benthic intertidal algal diversity, along the Israeli Mediterranean.
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- **Iluz D.**, Erez J., Heese C., Dubinsky Z., Silverman J. and Lazar B. Long-term and seasonal changes in primary production in the Northern Gulf of Eilat (Aqaba), Red Sea .
- Rahav E, Stambler N, Dishon G, Bar-Zeev E, Levi A, **Iluz D**, Herut B and Berman-Frank I. Phytoplankton photophysiology at the Levantine basin eastern Mediterranean Sea during summer
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E. Articles/Chapters in Scientific Books

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65. *Amar Z. and **Iluz D.** (2010) The persimmon in the Land of Israel. In: Studies of Ancient Jerusalem, City of David. The 11th Conference (Editor: Meiron, E.), pp. 61-73 (in Hebrew). (Ranking = Q4)
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74. ***Iluz D.** (2013). The Mediterranean Royal Purple, biology through ritual. "The Mediterranean Sea: Its History and Present Challenges", Goffredo S. and Dubinsky Z. (Eds.). Springer. pp. 559-570. ISBN 978-94-007-6703-4
75. *Dubinsky Z. and **Iluz D.** (2016). Corals and light: From energy source to deadly threat. "The Cnidaria, past present and future" Goffredo S. and Dubinsky Z. (Eds.). 30 pages.
76. *Sukenik N, Amar Z. Varvak A. and **Iluz D.** (2016). A re-evaluation of the textile dyes in the cave of letters. In Textiles, Basketry and Dyes in the Ancient Mediterranean World. J. Ortiz, C. Alfaro, L. Turell and M.^a J. Martínez (eds.), p. 263-274
77. *Amar Z. and **Iluz D.** (2017). "Balsam: The Most Expensive Perfume Plant in the World", The Paths of Daniel: Studies in Judaism and Jewish Culture in

Honor of Rabbi Professor Daniel Sperber (A. S. Ferziger ed.), Ramat Gan, pp. 15-27 (Ranking= Q3)

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E.2. Accepted for Publication/in Press

- *Sukenik N., Amar Z. and **Iluz D.** The textile dyes from Mo`a. in Mo'a's perfume road, Israel Antiquities Authority (collaboration with the late Mr. Izhar Hersfeld. 18 pages. (Ranking = Q3)
- Yehoshua Y., Zohary T., Dubinsky Z. and **Iluz, D.** Seasonal partitioning of primary production and biomass between phytoplankton and metaphyton in a newly created shallow lake in northern Israel. (Accepted for publication in a book on Lake Kinneret. Editor: Gophen, M.).

F. Articles in Conference Proceedings

- **Iluz D.**, Erez J., Lazar B. and Dubinsky Z. (1991) Primary production in the northern Gulf of Elat, Red Sea. Proceedings of the 12th Conference of the Interuniversity Institute, the H. Steinitz Marine Biology Laboratory, Eilat, pp. 54-56.
- Kamenir Y., Brenner S., Dubinsky Z., Haese C., **Iluz D.**, Lazar B., Al Qutob M., Sokoletsky L. and Stambler N. (2000) Time-space structure of a microbial food web: Oligotrophic Gulf of Eilat (Red Sea) simulation model. In: Book of Abstracts of the 7th European Marine Microbiology Symposium (EMMS), (Netherlands Institute of Ecology-Centre of Estuarine and Coastal Ecology and Netherlands Institute of Sea Research, Noordwijkerhout).
- Erez J., **Iluz, D.**, Silverman J. and Lazar B. (2002) Can coral reefs and mariculture coexist? A case study in the Northern Gulf of Eilat (Aqaba), Red Sea. Tropical temperate interactions. Proceedings of the 2002 Meeting of the Australian Marine Sciences Association (10-12 July, Fremantle, Western Australia).
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- *Sokoletsky L., Oren A., Stambler N. and **Iluz D.** (2009) Practical algorithms for remote-sensing retrieval of the water column constituents in the Israeli waters. Proceedings of the V International Conference Current Problems in Optics of Natural Waters, pp. 235-239. (Ci=4)
- *Hoffman R., Dubinsky Z. and **Iluz D.** (2011) Four alien seaweed species from Indo-Pacific origin (including two new records for the Mediterranean) threatening the local algal flora at the Haifa Bay in Israel. Poster presented at the 18th Symposium on Cryptogamic Botany, Barcelona, Spain. Abstract published in the conference Book of Abstracts, p. 61.
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- *Hoffman R., Israel A., Kamenir Y., Dubinsky Z. and **Iluz D.** (2011) Pollution effects on the benthic intertidal algal flora along the Israeli Mediterranean shores. Oral presentation at the 39th Annual Conference of the Israel Society of Ecology and Environmental Sciences.
- *Hoffman R., Israel A., Kamenir Y., Dubinsky Z. and **Iluz D.** (2011) Pollution effects on the benthic intertidal algal flora along the Israeli Mediterranean shores. Oral presentation at the Israeli Association of Aquatic Sciences, 8th Annual Conference, Hadera. Abstract published in the conference's 8th Book of Abstracts, P. 38.
- *Sukenik N, Amar Z. Varvak A. and **Iluz D.** (2014). A re-evaluation of the textile dyes in the cave of letters. In Textiles, Basketry and Dyes in the Ancient Mediterranean World. J. Ortiz, C. Alfaro, L. Turell and M.^a J. Martínez (eds.), Proceedings of the Vth International Symposium on Textiles and Dyes in the Ancient Mediterranean World (Montserrat, 19-22 March, 2014). P. 263-274
- * Akkaynak D. , Treibitz T., Shlesinger T., Tamir R., Loya Y., and **Iluz D.** (2017). What is the space of attenuation coefficients in underwater computer vision? Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition, p. 1-11. (Ranking= Q2; Ci=8)

H. Other Scientific Publications

H.1. Research Reports

- Gradients of primary production from shore to open water in the northern Gulf of Eilat. Reeflux Program, 1991
- Long-term changes in primary production in the northern Gulf of Eilat, Peace Park Program, 2001
- Epilithic algae and sea water quality in terms of changes of sea levels. Beit Berl College, 2001
- Phytoplankton as indicator of nutrient level. The Red Sea Marine Peace Park Project, 2003
- The oasis effect in semi-arid regions. Beit Berl College, 2005
- Checking the presence of contaminants by measuring the primary productivity and potential influence on the ecosystem in the Gulf of Eilat. Beit Berl College, 2005
- The effect of the fish cages on the ecosystem in the Gulf of Eilat. Mofet Institute, 2006
- Training research students in Ein-Yahav about the oasis effect in semi-arid regions. Beit Berl College, 2006
- *Reports every six months on the impact of dust on the ecosystem of the Gulf of Aqaba. NATO Research Foundation, 2007-2011
- *Development of a method for detecting spectral destructively dyes in ancient textiles. Beit Berl College, 2008
- * Ancient textiles found on MOA. Mofet Institute, 2008
- * Development of a non-destructive method for identifying ancient textiles. Mofet Institute, 2010
- *Report summarizing the five-year project on the impact of dust on the ecosystem of the Gulf of Aqaba. NATO SfP-981883, 2012
- * Penetration of light pollution from infrastructure installations into the ocean and its effect on animal vision and distribution. Ministry of Science, Technology and Space, 2014

- * Penetration of light pollution from infrastructure installations into the ocean and its effect on animal vision and distribution. Ministry of Science, Technology and Space, April 2016
- Antioxidants in *Commiphora gileadensis*, Talpiot College, Dec.2016
- Microalgae as a source of heat for biodiesel production amateur: development processes and genetic improvement technology on productivity. Ministry of Energy and Water, March, 2017
- Penetration of light pollution from infrastructure installations into the ocean and its effect on animal vision and distribution. Ministry of Science, Technology and Space, final report, May 2017
- Microalgae as a source of heat for biodiesel production amateur: development processes and genetic improvement technology on productivity. Ministry of Energy and Water. July 2016, 2017
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I. Other Publications:

I.1. Non-scientific, Non-refereed Publications

- Spanier Y., Sapir S., **Iluz D.** and Har Shefer Z. (2001) The educational field day in the educational system. Mofet Institute (in Hebrew)
הוצאת, הסיוור הלימודי במערכת החינוך. (2001) אילוז דוד והר שפר צבי, ספיר שאול, שפנייר יוסף פת"מכון מו
- Yehoshua Y. and **Iluz D.** (2002) Light field in the Kinneret littoral and its influence on epilithic algae. Kinneret News 25: 32-39 (in Hebrew).
שדה האור בליטוראל בכינרת והשפעתו על האצות האפיליטיות. (2002) יהושע ירון ודוד אילוז. חידשות הכנרת: 25:32-39
- *Amar Z. and **Iluz D.** (2013) Dyeing with Tek'helet according to Maimonides and using natural dyeing substances. *HaMaayan*, vol. 53, 4 (206), pp. 35-53 (in Hebrew)
53,4 חוברת, המעיין. ם ושימוש בסממני צביעה טבעיים"צביעת תכלת על פי הרמב (206) 35-53. עמ'

I.2. Popular Magazines

- *The Romans wore green 7.1.2008, *Maariv*.
- *Indigo in the Dead Sea. Danny Shalom, 23.6.2008. –*Makor Rishon*, p. 11
- *New study recommends allowing eating giraffe and deer. Jonathan Bender, 2008–*Makor Rishon*.
- *Camels for patients. David Kapah, 20.6.2008. *Diukan*.
- *Smell history. Smadar Shir, 17.9.2010. *The Kibbutz News*, p. 40.

- *The Bible Perfume's comeback. Dalia Mazuri, 02.09.2010. "Maariv", p. 23
- *Smell history. Smadar Shir, 2.9.2010. *Yediot Aharonot*, 24, p. 8.
- *Exposed plants of the Mishnah and Talmud. Yuri Yalon, 2.9.2010. *Israel Today*, p. 21.
- *After centuries, probably solved the persimmon puzzle. Nir Hasson, 2.9.2010. *Haaretz*, p. 15.
- *Ancient textiles from the Roman period. *National Geographic*.2008
- *The discovery of persimmon in Ein Gedi. *National Geographic*-March 2011.
- *Foreign donors profile (On the persimmon findings), Public Relations, Bar-Ilan University.
- *The findings of the month (September 2011) of researchers at Bar-Ilan University (about persimmon).
- *Perfume gardens. *Makor Rishon*, 20.7.12.
- *The full directory of Murex. *Makor Rishon*, 826, 7.6.2013.
- *Persimmon mystery in the Land of Israel. *Tzemah Hasade*, 2.12.13. <http://www.wildflowers.co.il/hebrew/tiulimReadMore.asp?ID=562>
- *Blue, purple and scarlet worm – 2000-years-old rare fabrics found, Meir Stein, Cocker reporter. 31.12.2013. <http://news.walla.co.il/?w=//2707954>.
- *2,000-year-old discovery: Textile dye with a snail found in the desert. Walla! News Tuesday, December 31, 2013, <http://news.walla.co.il/?w=//2707954>.
- *Desert discovery: Ancient fabric dyed by a snail. The most ancient, blue, purple, and scarlet worm uncovered in the study of the Antiquities Authority. The discovery that there are no parallels in the archaeological finds. *Maariv*. Missouri Medal, 31/12/2013. [12/1http://www.nrg.co.il/online/1/ART2/535/654.html?hp=1&cat=402](http://www.nrg.co.il/online/1/ART2/535/654.html?hp=1&cat=402)
- *Researchers find ancient fabrics in colours noted in Jewish sources. *Jewish Press News Briefs*. 31.12.2013. <http://www.jewishpress.com/news/breaking-news/researchers-find-ancient-fabrics-in-colors-noted-in-jewish-sources/2013/12/31/>
- *Research on advertising MOA fabrics in a popular magazine in Germany in the German language. <http://www.antikewelt.de/index.php/neue-textilfunde-mit-der-farbe-purpur-aus-der-judaischen-wuste-in-israel/>.
- The green algae which could lightning Ramat Gan city: <http://www.zavit.org.il/%D7%94%D7%90%D7%A6%D7%94-%D7%A9%D7%AA%D7%90%D7%99%D7%A8-%D7%90%D7%AA-%D7%9B%D7%9C-%D7%A8%D7%9E%D7%AA-%D7%92%D7%9F/>
- Testimony from the days of King David: Dyes from plants found in Timna: <http://m.ynet.co.il/Articles/4982104>

J. Other Works Related to my Research Field

J.1. Video Production

- * Produced a video for the holiday of Tu Bishvat about the seven species. Bar-Ilan University Press (2014).
https://www.youtube.com/watch?v=Q-wwe_Svx-c (in Hebrew)
<https://www.youtube.com/watch?v=x40fgG3wcgw>
- * Produced a video - Teaching workshop tour in rocky and sandy beaches. Bar-Ilan University Press (2012) (in Hebrew).
<http://www.youtube.com/watch?v=Lvi05uiarMo&feature=edu&list=PL8B44040DDBBCD253>

J.2. Development of Research Instruments

- **OxyPAM**- Metabolic cell that can measure photosynthesis and respiration of fluorescence spectroscopy in corals, macro and microalgae. Includes control of temperature, pH, light intensity, and fluorescence sensors, Control box and connected to a computer. Can measure photosynthesis and light intensity.
- **Flashing light panel** with 8 led for algal growth and acclimation that can set frequencies of flashing light and intensity of light for experiments of its effect on photosynthesis
- **Photosynthetron**- an instrument for measuring photosynthesis (C^{14} uptake) vs. light intensity. Twelve triplicates of light intensities. System on swivel wheel in water flow, exposed to sun light source. It has glass that penetrates visible and UV light.
- A system of led light source that can be controlled by a computer. It can design light intensities, frequencies of flashing light, and duty cycle. Designed for unique photosynthesis experiments.
- System for **antioxidant measurements**.
- In situ system for **^{14}C injection and incubation** in the sea.
- **Carbon (^{14}C) evaporation system**.
- **Educational greenhouse** - Building a greenhouse for botany studies and issues of *Shmita* (the seventh year).
- **PhotoBioreactor** for growing algae under flashing-light conditions (following our publication Abo Ghosh et al. 2015).
- **Cell for microscope** include flashing light control, for measuring algae movement in relation to light regimes
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L. Summary of my activities and future plans

L.1. My field of research:

- Algal Biotechnology: A. Determining the optimal growth conditions of microalgae for fast growth rates that lead to maximal yields, with less energy

investment. B. Elucidating the metabolic pathways of lipid synthesis in algae, and engineering pathways to increase the oil content in their cells for alternative energy production. C. Maximize the production of high-value chemicals, as by-products, such as antioxidants, pigments and polyunsaturated fatty acids (PUFAs) in microalgae, which contributes to the economic feasibility of algal-based biodiesel production.

- Photobiology: A. Underlining the mechanisms related to photosynthesis enhancement under flashing light. B. Studying the kinetics of the photoprotective mechanisms, such as the xanthophyll cycle, and their role in controlling energy loss in the photosynthetic light-utilization efficiency systems, due to thermal dissipation.
- Energetics: A. Constructing energy budgets for algal photosynthesis that based on the gain and lose processes (energy lifecycles). B. Finding ways to minimize energy loss during thermal dissipation, fluorescence and respiration.
- Bioreactor development: Growing algae under a flashing light regime created from the sunlight, which increases the overall biomass yield.
- Examining the potential of thermophilic algal species for their biotechnological applications, and improving their productivity for biofuel.
- Global warming and acidification effects on the rate of calcification in corals, algae, and gastropods.
- Documenting "light pollution" from infrastructure installations surrounding the Gulf of Eilat, and determining its negative impacts on the shallow-water organisms.
- Studying the influence of micro-gravity on biomineralization of marine organisms (calcification and silicification).
- Characterization and identification of dyes in antique textiles. We had studied fabrics and textiles from Moa, Timna and Judean desert caves. Collaborating with the Israel Antiquities Authority, and we have continued to explore ancient textiles from other sources. On this topic, we are developing a nondestructive method (spectral measurements) for identifying dyes on ancient fragile and precious fabrics currently in museum collections. Our next plan is to identify the source of animal skins found in archaeology sites.

Torah and Science:

- Continuing the study of the biological aspects of historical and archaeological research in collaboration with Prof. Zohar Amar from the Dept. of Land of Israel Studies and Archaeology. In these studies, we combine historical and archaeological findings with the Jewish traditions and religious rites. This is accomplished by applying the tools of science (physics, chemistry, and biology) to recreate the material culture of ancient times.

Here are a few examples of such studies and relevant publications:

- a. Curdling, a property of animal milk and its relation to kashrut and lactose allergies.
- b. Identifying blue plant and animal dyes listed by the Rambam.
- c. Reintroducing the culture of the most precious herbal incense and perfume

source,-the biblical persimmon, for which we submitted a proposal to establish a center of learning and exploring its history and exploitation at Ein Gedi.

L.2. Teaching:

- In 2015, I started a **teleprocessing-teaching** workshop at Mofet Institute, and now leading the development and application of this approach in the above-mentioned institute. My future plan is to introduce and use this tool to promote science education in schools. There are many frontal **teleprocessing-teaching** courses but not practical ones for laboratories, tours and field studies.
- **Development of distance learning** for a meaningful introduction to science. Schools do not have enough resources to conduct laboratory experiments and field studies. Given the high costs of maintaining laboratories, schools should find a replacement or provide students with tools for scientific thinking through experience from far. Cameras and sensors placed in institutions or centers will allow distance learning in the lab without having to physically be there, in schools lacking such facilities and resources.
- **Outdoor learning** - I see a great significance in students learning outside the classroom, both in the immediate vicinity and away on educational tours. Interdisciplinary field trips and outdoor study has a strong impact, resulting in high assimilation. This connects the students to their heritage, traditions, and to the Land of Israel. I am planning to promote the training of teachers to be able to conduct educational field trips in the college and beyond. I am also executing this within the central forum for educational tours, Mofet (רפת"ג).

Education for sustainability: It is very important to us and to the future generations to implement sustainability and environmental education in teaching. During the last few years, I have been the coordinator of these studies in the college. These aspects are currently being studied by early childhood and elementary schools. I have introduced the sustainability courses to my college to be a duty part of their studies.