

CURRICULUM VITAE1. **Personal Details**

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2. **Higher Education**a. **Undergraduate and Graduate Studies**

Period of Study	Name of Institution and Department	Degree
1979 - 1982	Hebrew University, School of Agriculture, Department of Soils & Water	B.Sc.
1983 - 1986	City University of New York, Department of Biology	M.Sc.
1986 - 1989	City University of New York, Department of Biology	Ph.D.

b. **Post-Doctoral Studies**

Period of Study	Name of Institution and Department/Lab	Name of Hosts
1989 - 1990	National Center for Mariculture (NCM), Israel Oceanographic & Limnological Research (IOLR), Ltd	Hillel Gordin, Amir Neori

3. Academic Ranks and Tenure in Institutes of Higher Education

Years	Name of Institution and Department	Rank/Position
1983 – 1988	The City College of New York, Biology Department	Adjunct Lecturer, teaching several core lab courses
2002 – 2004	Woods Hole Oceanographic Inst., Marine Policy Center	Senior Research Fellow
2001 – 2004	Massachusetts Institute of Technology, Department of Civil & Environmental Engineering	Visiting Scholar
2004 – present	University of Haifa, Recanati Institute for Maritime Studies	Senior Research Fellow
2004 – 2011	University of Haifa, Department of Maritime Civilizations	Teaching Fellow
2011 - 2012	University of Haifa, Charney School of Marine Sciences, Department of Marine Biology	Senior Lecturer
2012 - 2014	University of Haifa, Charney School of Marine Sciences, Department of Maritime Civilizations	Senior Lecturer
2015 - present	University of Haifa, Charney School of Marine Sciences, Department of Maritime Civilizations	Senior Lecturer, with tenure

Notes: * represents activities since appointment to Senior Lecturer

** represents activities since tenure

4. Offices in University Academic Administration

Years	Name of Institution and Department	Role
2009 – 2016	Recanati Institute for Maritime Studies, University of Haifa	Member, Finance Committee
2011 – 2013	Department of Maritime Civilizations, University of Haifa	Member, M.A. Studies Committee
* 2012 – 2016	Department of Maritime Civilizations, University of Haifa	Chair, International M.A. Program in Maritime Civilizations
* 2013 – present	Department of Maritime Civilizations, University of Haifa	Chair, M.A. Studies Committee

5. Scholarly Positions and Activities outside the University

Years	Membership in Academic and Professional Associations
1985 - 1996	International Society for Protozoology
1985 - present	American Society of Limnology and Oceanography
1986 - present	American Geophysical Union
1998 - present	Israel Society of Ecology and Environmental Sciences
2004 - present	World Aquaculture Society
2004 - present	Israeli Association for Aquatic Studies
2005 - 2010	Israel Society for Microbiology
2007 - 2011	FAO working group “Building an Ecosystem Approach to Aquaculture”
2009 - present	Ecosystem-Based Aquaculture Group (EBAG), IUCN Commission
2011 - 2013	Member, Steering Committee, National (Israel) Panel on the Impacts of Climate Change on Marine Biodiversity and Ecosystem Services.
** 2016 – present	IUCN Commission on Ecosystem Management

Years	Editorial Assignments
2007 – 2016	Editorial advisory board member and reviewer for the journal <i>Aquaculture</i>
2007 – present	Editorial advisory board member and reviewer for the journals: <i>Aquaculture Environment Interactions</i> ; <i>The Open Fish Science Journal</i>
** 2017 – present	Editorial board member for the journal : <i>Regional Environmental Change</i>
** 2018	Editorial board member for the journal : <i>Aquaculture Environment Interactions</i>

Years	Reviewing for Refereed Journal
1991 – present	<i>Marine Biology</i> , R=30/106 (Q2) in Marine & Freshwater Biology <i>Marine Biology Research</i> , R=126/158 (Q4) in Ecology, 79/106 (Q3) Marine & Freshwater Biology <i>Hydrobiologia</i> , R=31/106 (Q2) in Marine & Freshwater Biology <i>Marine Ecology Progress Series</i> ,

	<p>R=71/158 (Q2) in Ecology, 28/106 (Q2) Marine & Freshwater Biology, 18/64 (Q2) in Oceanography <i>Deep Sea Research</i>,</p> <p>Part I: R=15/64 (Q1) in Oceanography Part II: R=13/64 (Q1) in Oceanography <i>Ecological Modelling</i>,</p> <p>R=59/158 (Q2) in Ecology <i>Journal of Applied Ecology</i>,</p> <p>R=4/55 (Q1) in Biodiversity Conservation, 13/158 (Q1) in Ecology <i>Estuarine, Coastal and Shelf Science</i>,</p> <p>R=23/106 (Q1) Marine & Freshwater Biology, 14/64 (Q1) in Oceanography <i>ICES Journal of Marine Science</i>,</p> <p>R=7/50 (Q1) in Fisheries, 15/106 (Q1) Marine & Freshwater Biology, 9/64 (Q1) in Oceanography <i>Aquaculture Research</i>,</p> <p>R=27/50 (Q3) in Fisheries <i>Israeli Journal of Aquaculture</i>,</p> <p>R=46/50 (Q4) in Fisheries <i>Israel Journal of Ecology and Evolution</i>,</p> <p>R=123/158 (Q4) in Ecology, 43/49 (Q4) in Evolutionary Biology <i>Environmental Monitoring and Assessment</i>,</p> <p>IF (2017)=1.804; R=135/241 (Q3) in Environmental Sciences <i>Journal of Plankton Research</i>,</p> <p>R=42/106 (Q2) Marine & Freshwater Biology, 26/64 (Q2) in Oceanography <i>Plos One</i>,</p> <p>R=15/64 (Q1) in Multidisciplinary Sciences <i>Journal of Phycology</i>,</p> <p>R=41/222 (Q1) in Plant Sciences, 13/106 (Q1) in Marine & Freshwater Biology <i>Marine Pollution Bulletin</i>,</p> <p>R=66/241 (Q1) in Environmental Sciences, 9/106 (Q1) in Marine & Freshwater Biology <i>Marine Environmental Research</i>,</p> <p>R=68/241 (Q2) in Environmental Sciences, 11/106 (Q1) in Marine & Freshwater Biology, 30/94 (Q2) in Toxicology</p>
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Years	Reviewing for Funding Agencies
1991 – present	National Science Foundation, U.S.A., European Science Foundation, Israeli Ministry of Agriculture, Israeli Ministry of Environment, NOAA SeaGrant, Binational Agriculture Research & Development Fund (BARD), Binational (USA-Israel) Science Foundation (BSF), Dutch Technology Foundation, Research Council of Norway, Schulich Ocean Studies Centre Initiative
2013	Facilitator and Expert Evaluator of Proposals submitted for Development of the Greek National Research Infrastructure Roadmap for the period 2014-2020, Greek Ministry of Education and Religious Affairs, General Secretariat for Research and Technology
** 2016 – present	Member , European Science Foundation (ESF) College of Expert Reviewers
** 2018	Member , Deciding Committee for Italy-Israel binational granting agency, Israeli MOST
** 2018	Member , Deciding Committee for Israeli Ministry of Agriculture granting agency

Years	Scientific Consultant Activities
1992 - 2000	Occasional consultant to the Ardag Marine Biotechnology and Aquaculture Company, Eilat on environmental projects
1993 - 1998	Environmental Impact Assessments of Eilat fish farms, delivered to the Israeli Ministry of Environment
1995	Microbiological assessment of seawater samples for the Mekorot Water Company, as they developed seawater desalination in Eilat
1996	Consultation to the Herods Hotel in Eilat, regarding environmental ramifications of seawater use in pools
2003	Carried out a study to establish environmental ramifications of dredging a Cape Cod estuary, The Woods Hole Group, Falmouth, MA, USA.
2005 - 2015	Invited expert, on Environment and Aquaculture in the Mediterranean for the General Fisheries Commission of the Mediterranean (GFCM), Food and Agriculture Organization (FAO), United Nations.

2006 - 2015	Invited expert, on Aquaculture to World Conservation Union (IUCN) to develop a series of Guidelines for Sustainable Development of Aquaculture in the Mediterranean.
2007	Invited expert, by the Greek Ministry for Agriculture & Food to formulate a scheme for regulation of fish farming in Greece; Athens, Greece.
2007	Invited expert, to international workshop on “Atmospheric CO ₂ , ocean acidification and ecological changes in planktonic calcifying organisms”; Barcelona, Spain.
2008 - 2010	Consultant to Chilean government on environmental remediation of mariculture impacts.
2010	Invited expert, to the FAO to develop Guidelines for Offshore Aquaculture; Orbetello, Italy.
2011	Invited expert, to a scoping workshop on the effect of jellyfish on aquaculture; Oban, Scotland.

Years	National Representative in International Agency
** 2017 - present	Israeli representative to the Group of Senior Officials (GSO), BLUEMED Working Group of the BlueMed Initiative; http://www.bluedmed-initiative.eu/

Years	Organization and Coordination of Research Activities
1985 - 1987	Organization of departmental seminars, Department of Biology, City College of New York, N.Y.
1991 - 2000	In charge of Radioactive Safety and Diving Safety at NCM, Eilat.
1992 - 1993	Acting head of Water Quality Research Group, coordinating research on the use of algal biofilters in recirculating aquaculture systems, NCM, Eilat.
1994	Organized, coordinated and led (co-Chief Scientist) the first joint German-Israeli research cruise on board R.V. <i>Poseidon</i> in the eastern Mediterranean Sea
1994 - 2004	Head of the Environmental and Water Quality Research Group, NCM, Eilat
2000-2003	Scientific coordinator of multi-national EU STREP project <i>BIOFAQs</i>
*2012	Helped coordinate and organize scoping workshop in Xiamen, China on potential collaboration among GU8 Consortium of Universities that Reside by the Sea

Years	Research Assistantships
1980 - 1982	Soil and Water Sciences, The Volcani Institute for Agricultural Research, Bet Dagan, Israel.

1988 - 1989	Marine Microbiology Group, Lamont Doherty Geological Observatory, Columbia University, NY.
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6. Active Participation in Scholarly Conferences

Note: where paper was presented by a co-author rather than myself, that name is noted and underlined in the “role” cell

6a. International Conferences – Held Abroad

Date	Name of Conference	Place of Conference	Subject of Lecture/Discussion	Role
16.6.1987	Summer Meeting of the American Society of Limnology & Oceanography (ASLO)	Madison, Wisconsin, USA	Microbial populations associated with colonial radiolarian	Lecture
10.11.1988	Hudson River Foundation Symposium on Managing the Estuary	New Paltz, New York, USA	Microbial dissolved organic phosphorus utilization in the Hudson River estuary	Lecture <u>James Ammerman</u> (Co-author)
13.2.1988	Winter Meeting of ASLO	New Orleans, Louisiana, USA	Carbon flow from colonial radiolarian to parasitic amphipods	Lecture
6.12.1989	Ocean Sciences Meeting	San Francisco, California, USA	The microbial ecology of colonial radiolaria	Lecture
12.6.1990	Summer Meeting of ASLO	Williamsburg, Virginia, USA	Heterotrophic dinoflagellates, bacteria and cyanobacteria dominate plankton biomass in the euphotic layer of the oligotrophic Gulf of Eilat (Aqaba)	Lecture
26.6.1990	43 rd Annual Meeting of the Society of Protozoologists	University of Maryland, Maryland, USA	Free-living dinoflagellates associated with colonial radiolaria	Lecture
27.8.1991	Second International Conference of Hungary on Protozoology	Tihany, Hungary	Planktonic colonial radiolaria: microhabitats for oceanic dinoflagellates	Lecture

20.8.1991	The 5 th International Workshop on the Measurement of Microbial Activities in the Carbon Cycle in Aquatic Environments: Microbial Ecology of Pelagic Environments	Helsingor, Denmark	Microbial trophodynamics in hypertrophic seawater fishponds	Lecture
9.9.1992	The 6 th international Symposium on Microbial Ecology (ISME-6)	Barcelona, Spain	Microbial mats and fish bioturbation: how do these affect the fate of organic matter in enriched sediments in the oligotrophic Gulf of Aqaba?	Lecture
1.6.1993	Joint Meeting of ASLO and the Society of Wetland Scientists	Edmonton, Canada	Mat-forming prokaryotes and associated microbes on hypertrophic sediments in the oligotrophic Gulf of Eilat (Aqaba)	Lecture
6.9.1995	International Workshop on Modelling Environmental Interactions of Mariculture	Dartmouth, Nova Scotia, Canada	The use of fuzzy logic in the interpretation of dive logs and the state of the environment around fish farms	Lecture and Panel member INVITED
8.10.1999	7 th International Conference on Artificial Reefs and related aquatic habitats	San Remo, Italy	The potential of artificial reefs to reduce organic enrichment caused by commercial net cage fish farming in the Gulf of Aqaba	Lecture
27.7.2000	1 st MARICULT conference "How can we increase the production and harvest of living marine resources in the new millennium? "	Trondheim, Norway	In situ biofiltration: a means to curtail the release of effluents from intensive finfish cage culture and enhance sustainability	Lecture
12.2.2001	Aquatic Sciences Meeting	Albuquerque, NM, USA	Can biofilters reduce effluent dispersal from net-pen fish farms?	Lecture

18.6.2001	Open Ocean Aquaculture IV Symposium	St. Andrews, New Brunswick, Canada	A new approach to sustainable mariculture: stimulating “natural” biofilters to capture fish farm wastes	Lecture and Panel member INVITED
2.10.2003	NATO-Advanced Study institute, <i>Strategic Management of Marine Ecosystems</i>	Sophia Antipolis, Antibes, France	Environmental Impacts of Mariculture in the Gulf of Aqaba - a case study & how we may address some of the issues?	Lecture and Panel member INVITED
12.5.2006	World Aquaculture Society Meeting - AQUA 2006	Florence, Italy	What do diurnal dynamics in water quality around a fish farm tell us about impacts?	Lecture
12.5.2006	World Aquaculture Society Meeting - AQUA 2006	Florence, Italy	Assessing environmental impacts of marine shellfish aquaculture: a bi-coastal study	Poster
25.10.2007	Competing Claims - Aquaculture Europe '07 Conference	Istanbul, Turkey	An ECosystem Approach to Sustainable Aquaculture; the ECASA project	Lecture and Panel member INVITED
25.10.2007	Competing Claims - Aquaculture Europe '07 Conference	Istanbul, Turkey	An innovative approach to the use of foraminifera to determine the impact of mariculture on the benthic environment in the Gulf of Aqaba, Red Sea	Session chair and lecture

27.9.2007	ESF Euroclimate Workshop "Atmospheric CO ₂ , ocean acidification and ecological changes in planktonic calcifying organisms"	Barcelona, Spain	How will acidification of the Mediterranean and other water bodies affect population dynamics of non-calcareous plankton such as medusae	Lecture INVITED
8.7.2009	The 10 th International Forum on Marine Science & Technology & Economic Development	Qingdao, People's Republic of China	Prospects for IMTA in an oligotrophic marine ecosystem: the Mediterranean experience	Panel member, session chair and lecture INVITED
22.3.2010	FAO Workshop, "The Initiation of Offshore Mariculture"	Orbetello, Italy	Current environmental and ecosystem issues regarding offshore marine aquaculture in tropical regions	Lecture and Panel member INVITED
13.7.2010	Third International Jellyfish Blooms Symposium	Mar del Plata, Argentina	First record of the hyperiid amphipod <i>Brachyscelus rapacoides</i> on scyphomedusea in the Levant	Lecture
7.10.2010	Aquaculture Europe 2010 Conference	Porto, Portugal	Factors that affect public perception of marine aquaculture in Germany & Israel	Poster
23.11.2010	FAO Workshop on Aquaculture Site Selection and Carrying Capacity	St. George's Bay, Malta	Environmental quality standards for marine fish farms	Panel member INVITED
16.2.2011	International Aquatic Sciences Meeting	San Juan, Puerto Rico	Dynamics in sediment biogeochemistry following the removal of net-cage fish farms in the northern Gulf of Aqaba	Town Hall meeting organizer and lecture

23.3.2011	Scoping workshop towards a jellyfish monitoring network for Scottish waters	Scottish Institute of Marine Science, Oban, Scotland	Jellyfish interactions with aquaculture – the Mediterranean experience	Lecture and Panel member INVITED
*23.2.2014	Ocean Sciences Meeting 2014	Honolulu, Hawaii, USA	Integrated Multi Trophic Aquaculture as a means to enhance sustainability of marine aquaculture	Lecture INVITED
*18.9.2014	ICES Annual Science Conference 2014 - Sustainability in a changing ocean	La Coruna, Spain	Regulation of the scyphomedusa <i>Cyanea capillata</i> through predation on its larval stages, from release of planulae to settlement	Lecture
**15.10.2014	Aquaculture Europe 2014	San Sebastian, Spain	Digestibility of waste effluents from sea bream culture by the omnivorous grey mullet (<i>Mugil cephalus</i>)	Lecture, <u>Dafna Israel</u>
** 25.2.2015	ASLO Aquatic Sciences Meeting 2015, Global and Regional Perspectives — North Meets South	Granada, Spain	Impact of an invasive swarming scyphomedusa on Israeli fisheries	Lecture
** 2-3.3.2015	PERSEUS International Workshop - “Coming to grips with the jellyfish phenomenon in the Southern European & other Seas: research to the rescue of coastal managers”	Cadiz, Spain	“Now you see them, now you don’t” – the need for 3-dimensional observational and monitoring tools for marine jellyfish	Lecture and Panel member INVITED
** 31.8 – 4.9.2015	14 th Deep Sea Biology Symposium	Aveiro, Portugal	Akhziv submarine canyon: an oasis in the deep sea?	Poster, <u>Mia Elasar</u>

** 7 - 10.9.2015	International Forum on Modern Mariculture Development Strategy	Dalian, China	Offshore Aquaculture – is it really more sustainable than coastal aquaculture	PLENARY speaker, Lecture and Panel member INVITED
** 13-15.10.2015	“In the wake of plastics” - Addressing marine litter in the Mediterranean region CleanSea participatory workshop	Venice, Italy	Policy implications of marine debris studies: the Israeli case study	Lecture, <u>Noam van der Hal</u>
** 25-27.5.2016	MICRO2016 - Fate and Impact of Microplastics in Marine Ecosystems: From the Coastline to the Open Sea	Lanzarote, Spain	Microplastic distribution and composition in Israeli Mediterranean coastal waters	Lecture, <u>Noam van der Hal</u>
** 29.5 – 3.6.2016	5th International Jellyfish Blooms Symposium	Barcelona, Spain	Proactive Jellyfish Citizen Science – much more than “just adding water	Lecture and session co-chair with Z. Kuplik
** 12-16.9.2016	41 st CIESM Conference	Kiel, Germany	The effect of well-amelioration brine on coastal microbial populations in the SE Mediterranean Sea	Lecture, <u>Ofrat Raveh</u>
** 20 – 23.9.2016	Aquaculture Europe 2016 – Food for Thought	Edinburgh, Scotland	Economic sustainability of IMTA – a European case study	Lecture, <u>Shirra Freeman</u>
** 28-30.10.2016	20th European Elasmobranch Association Conference	Bristol, United Kingdom	Occurrence of the blue stingray <i>Dasyatis chrysonota</i> in Israeli Mediterranean waters	Lecture, <u>Adi Barash</u>
** 26-29.9.2017	International conference on microplastic pollution in the Mediterranean Sea	Capri, Italy	Microplastics as ephemeral and possibly preferred substrates for planktonic cnidarian planulae	Lecture and Panel member
** 3–7.9.2018	University of the Arctic annual meeting, UARCTIC 2018	Oulu, Finland	Arctic IMTA	Lecture, <u>Peter Krost</u>

6b. International Conferences – Held in Israel

Date	Name of Conference	Place of Conference	Subject of Lecture/Discussion	Role
12.3.1990	Joint US-Israel Workshop on Marine Symbioses	Marine Biology Laboratory, Eilat, Israel	Carbon flow in the colonial radiolarian microcosm	Lecture
30.5.1992	The Moshe Shilo Workshop on Marine CO ₂ fixation and Recycling: Microscale to Global Processes	Eilat, Israel	Microbial mats mediate the benthic turnover of organic matter in polluted sediments in the Gulf of Aqaba	Lecture
8.6.1992	US – Israel Workshop on Mariculture and the Environment	Eilat, Israel	Benthic microbial mat dynamics in and on seafloor sediments in the Gulf of Eilat (Aqaba), Red Sea	Lecture
22.6.1992	The 5th International Conference on Environmental Quality and Ecosystem Stability	Jerusalem, Israel	The impact of a floating fish farm on the underlying benthos and on the benthic nutrient regeneration process	Lecture
25.1.1994	The 1st Annual Meeting on the Ecosystem of the Gulf of Aqaba in Relation to the Economic Development and the Peace Process	Eilat, Israel	Surprising ecological changes in the sediments below a fish farm in the northern Gulf of Eilat	Lecture
30.1.1995	The Ecosystem of the Gulf of Aqaba in Relation to the Enhanced Economical Development and the Peace Process - II	Eilat, Israel	Recent developments in assessing the environmental impacts of net pen fish farming in the Gulf of Aqaba	Lecture
16.1.1996	The Ecosystem of the Gulf of Aqaba in Relation to the Enhanced Economical Development and the Peace Process - III	Eilat, Israel	Assessing anthropogenic impacts on the marine environment in the Gulf of Aqaba: comparison among selected methods	Lecture

6c. Local Conferences

20.4.2010	Annual meeting of the Israel Association of Aquatic Sciences	IUI, Eilat	Extensive aggregations of wild fish at coastal net-cage fish farms in the Red Sea	Lecture
11.4.2011	Annual meeting of the Israel Association of Aquatic Sciences	Hefziba Facility, Hadera	Economic evaluation of jellyfish effects on the fishery sector of Israel	Poster, <u>Noa Nakar</u>
* 22.5.2014	Annual meeting of the Israel Association of Aquatic Sciences	Peres Center for Peace, Jaffa	1. The role of the Akhziv Canyon in determining local food web dynamics. 2. Microplastic pollution and its potential effects on marine biota in Israeli coastal waters	Posters, <u>Mia Elasar</u> , <u>Noam van der Hal</u>
** 20.6.2016	Sustainable food systems: agriculture, environment & nutrition	Tel Aviv University, Tel Aviv	Ecosystem services provided by Israeli aquaculture: a case study in sustainable protein production	Lecture, <u>Ayana Bennet</u>

6d. Organization of Conferences or Sessions

Year	Name of Conference	Place of Conference	Subject of Session	Role
12-16.2.2001	Aquatic Sciences Meeting	Albuquerque, NM, USA	Environmental Impacts of Mariculture and Aquaculture	Session organizer
11-15.2.2002	Ocean Sciences Meeting	Oahu, Hawaii, USA	Mariculture and its impacts on the marine environment: what we know and what we don't	Session organizer
26.9.2002	Ballast Water Management Workshop: Regional Solutions	Boston, MA, USA	Strategies for Ballast Water Management	Co-organized the workshop and convened roundtable discussion with J. Pederson
3-10.10.2002	Workshop on Aquaculture – Environment Interactions	Eilat, Israel	Environmental Impacts of Mariculture and Possible Mitigation Strategies	Initiated, organized and coordinated hands-on workshop

13.11.2003	Cape Cod Academics, Managers & End-Users Meeting on Nitrogen Remediation Strategies	Barnstable, MA, USA	How can we use shellfish for nutrient remediation?	Co-organized with H. Clark, H. Kite-Powell, and participated in meeting with stakeholders
25-26.3.2004	Integrated Multi-Trophic Aquaculture Workshop	St John, NB, Canada	Integrated aquaculture as a means of bioremediation	Co-organized with T. Chopin, S. Robinson and served as panel member
13.5.2006	World Aquaculture Society Meeting - AQUA 2006	Florence, Italy	Brainstorming session on aquaculture priority areas, to advise the EU on topics toward the 7 th framework program	Initiated and organized the brainstorming session
24-27.10.2007	Competing Claims - Aquaculture Europe '07 Conference	Istanbul, Turkey	Integrated aquaculture in the EU	Program Committee member, Session Chair and speaker
2-7.3.2008	Ocean Sciences Meeting	Orlando, FL, USA	Marine Aquaculture - What are the Burning Environmental Issues and Solutions?	Co-organized this special session with J. Marra
25-30.1.2009	ASLO Aquatic Sciences Meeting 2009, A Cruise Through Nice Waters	Nice, France	Jellyfish Blooms	Co-organized special session with J. Purcell
13-18.2.2011	International Aquatic Sciences Meeting	San Juan, Puerto Rico	Oceanographers & Limnologists Feeding the World	Organized Town Hall Meeting
* 23-27.9.13	10 th International Conference on Artificial Reefs and Related Aquatic Habitats	Izmir, Turkey	Conference Steering Committee	Steering committee member
* 1-5.12.2013	International Conference on Coelenterate Biology	Eilat, Israel	Ecology of coelenterates	Organizing Committee member & Session Co-chair with M. Dawson

* 22-27.2.2015	ASLO Aquatic Sciences Meeting 2015, Global and Regional Perspectives — North Meets South	Granada, Spain	Aquaculture & the Environment: synergy or antagonism?	Organized and co-chaired the Session with P. Krost
* 2-3.3.2015	PERSEUS International Workshop	Cadiz, Spain	Now you see them, now you don't – the need for 3-dimensional observational and monitoring tools for jellyfish.	Session Chair
** 29.5 – 3.6.2016	5th International Jellyfish Blooms Symposium	Barcelona, Spain	Challenges in jellyfish research and how we deal with these	Organized and co-chaired the Session with Z. Kuplik
** 17-20.10.2017	Aquaculture Europe 2017	Dubrovnik, Croatia	Integrated Multi-trophic Aquaculture	Organized and chaired the Session
** 10-15.6.2018	ASLO 2018 summer meeting.	Victoria, B.C. Canada	Sustainable Aquaculture: Tools, Trends, and Prospects	Session co-Chair with J. Marra and S. Freeman

7. Invited Lectures (Others than in Scholarly Conferences)

7a. Abroad

Year	Name of Forum	Place of Lecture	Subject of Lecture	Role
1989	Department of Biology Seminar	City University of New York, N.Y., USA	Microbial ecology of colonial radiolaria	Lecture
1994	Special Seminar	Division of Fisheries and Oceans, Nova Scotia, Canada	Integrated aquaculture – an Israeli case study.	Lecture
1997	Institute Seminar	Institut für Meereskunde, Kiel, Germany	The application of fuzzy logic to aquaculture impact assessments	Lecture
2001	Special Seminar	Scottish Association of Marine Science, Oban, UK	Sustainable net cage mariculture in the Gulf of Aqaba- is this actually feasible?	Lecture
2002	Special Seminar	University of Massachusetts, Boston, MA, USA	Finfish cage aquaculture and the environment	Lecture
2002	Institute Seminar	Marine Policy Center, Woods Hole Oceanographic Institute, Woods Hole, MA, USA	Is it possible to make finfish cage aquaculture more environmentally sustainable?	Lecture

2003	Institute Seminar	National Marine Fisheries Service, NOAA, Woods Hole, MA, USA	Net pen fish farms and a healthy marine environment - can these be compatible?	Lecture
2003	Special Seminar	MIT SCUBA Club, Cambridge, MA, USA	An overview of marine environmental research projects involving SCUBA	Lecture
2007	Institute Seminar	IFOP (Fisheries & Aquaculture Research), Chiloe, Chile	How can we help make aquaculture in Chiloe more sustainable?	Lecture
2008	Institute Seminar	Tasmania Aquaculture & Fisheries Institute, Hobart, Tasmania	Israeli marine aquaculture - some environmental issues (& solutions)	Lecture
2009	Special Seminar	Yellow Sea Fisheries Research Institute, Chinese Academy of Fishery Sciences, Qingdao, China	Various means to address environmental concerns related to Israeli mariculture	Lecture
2011	Special Workshop organized by Crown Estate	Scottish Association of Marine Science, Oban, UK	Jellyfish interactions with aquaculture – the Mediterranean experience	Lecture
*2012	GU8 Scoping Workshop on Ocean Sciences & Marine Biotechnology	University of Xiamen, China	What happens when jellyfish blooms and marine aquaculture coincide?	Lecture
*2013	IMBIZO III (IMBER) Workshop - The future of marine biogeochemistry, ecosystems and societies: Multi-dimensional approaches to the challenges of global change in continental margins and open ocean systems	Goa, India	Reduced environmental pressure in the Israeli coastal ecosystem – remediation by means of policy change	Lecture
*2013	Special Symposium on Artificial Reefs	Marseille, France	Artificial reefs as a means to enhance the sustainability of marine aquaculture	Lecture

**2018	Special Town Hall meeting - Science of Microplastics	Woods Hole Oceanographic Institute, MA, USA	Marine microplastics research in the AMBER team, University of Haifa	Lecture
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7b. In Israel.

Year	Name of Forum	Place of Lecture	Subject of Lecture	Role
1989	Institute Seminar	National Center for Mariculture, Eilat	The microbial consortium associated with colonial radiolaria	Lecture
1990	Institute Seminar	Steinitz Marine Biology Laboratory, Eilat	Microplankton dynamics at station A in the Gulf of Eilat	Lecture
1999	Special Seminar	Field School, Eilat	Mariculture in the Red Sea – pro or con?	Lecture
2003	Institute Seminar	Holon Academy Institute of Technology, Holon	In situ biofiltration: a means to counter coastal eutrophication	Lecture
2007	Departmental Seminar	Oranim College, Kiryat Tivon	Mariculture in Eilat – could it have been done better?	Lecture
2008	Special Seminar	Yad ben Zvi Institute, Jerusalem	Can we protect our Mediterranean shores? On marine pollution and coastal management	Lecture
2008	Institute Seminar	Kinneret Limnological Laboratory, IOLR	What do biological indicators tell us about the impact of human activities on coastal environments? Fish-farming as a case study	Lecture
2009	Departmental Seminar	Geography Department, University of Haifa	Integrated aquaculture in China	Lecture
2011	Special Workshop EU-Israel Cooperation on Climate Change	University of Haifa	The concept of sustainability in the EU "CIRCLE-MED" Framework Program Project - INTERMED	Lecture

2011	Special Symposium: Taiwan-Israel Research Symposium on "Effects of Human Activities on Marine Environments"	University of Haifa	Sustainable aquaculture: getting the most out of the ocean with the least effect	Lecture
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8a. Colloquium Talks – Invited

Year	Name of Forum	Place of Lecture	Presentation
1995	Chemistry Department Colloquium	University of Maine, Darling Marine Center	Red Sea aquaculture – fish farming in an oligotrophic environment
2001	Institute Colloquium	Marine Biological Station, Piran, Slovenia	Environmental impacts of mariculture and some means to reduce these
2002	Institute Colloquium	Hawaii Pacific University, Oceanic Institute	Aquaculture - Environment interactions and what we can do about these
2003	Institute Colloquium	Ort Braude College, Karmiel	Aquatic ecosystem services - utilizing nature wisely and sustainably
2005	Department Colloquium	Department of Geography, University of Haifa	Net-pen mariculture and the environment: some first-hand insight on the environmental issues
*2013	Institute Colloquium	Neveh Ya'ar, Agriculture Research Center,	Aquaculture in the 21 st Century – is it user friendly?

9. Research Grants

9a. Grants Awarded

Role in Research	Other Researchers (Name & Role)	Title	Funded by (C= Competitive Fund)	Amount	Years
Co-PI	Amir Neori (PI), Michael Krom (co-PI), Steven Ellner (co-PI), Claude Boyd (PI)	Use of macroalgae to solve water quality problems in intensively cultured marine fishponds	BARD (US-Israel Bi-National Agricultural Research Development) (C)	\$300,000	1990 – 1993

PI		Microbial interactions and their influence on water quality in intensively managed seawater fish ponds.	Arava Research & Development (Israel)	\$60,000	1990 – 1992
Co-PI	Peter Krost (co-PI), Dieter Schnack (PI)	Environmental effects of net cage fish farming in the Gulf of Eilat (Aqaba).	GKSS (Germany/Israel) (C)	\$14,000	1991 – 1993
Co-PI	Nehemia Sar (PI), Alfred Puhler (co-PI)	Halophila stipulacea: a nitrogen-fixing seagrass and potential source of fish food.	GKSS (Germany/Israel) (C)	\$225,000	1991 – 1994
Co-PI	Amir Neori (PI)	The use of unicellular plankton as biological indicators of pollution in the Gulf of Eilat (Aqaba).	Israeli Ministry of Energy and Infrastructure	\$9,000	1991 – 1993
PI		Water quality and microbial dynamics in an integrated seawater fish ponds system	Arava Research & Development Fund (Israel)	\$30,000	1993 – 1994
Co-PI	Colin Porter (PI), Noam Mozes (co-PI)	The use of seaweeds to improve the environment around an intensive fish cage farm in the northern Gulf of Elat (Aqaba)	Israeli Ministry of Environmental Quality	\$8,000	1993 – 1994
Co-PI	Harald Rosenthal (PI), Myroula Hadji-christophorou (co-PI)	Modelling benthic disturbance and recovery in warm water mariculture	AVICENNE (Commission of the European Communities) (C)	\$315,000	1995 – 1998

PI	Barak Herut (co-PI), Nurit Kress (co-PI), Ulrich Fiedler (co-PI), Dieter Adelung (PI)	Examining the use of hydrogen peroxide production rates as a tracer of anthropogenic pollution in coastal marine waters of the Mediterranean, Red and Baltic Seas.	BMBF (Germany/Israel) (C)	\$294,000	1995 – 1998
PI	Ehud Spanier (PI)	Examining the potential of artificial reefs to reduce organic enrichment caused by commercial marine net cage fish farming in the Gulf of Aqaba.	Israeli Ministry of the Environment (C)	\$36,000	1999 – 2001
Co-PI	Kenny Black (PI), Martin Sayer (co-PI), Ehud Spanier (co-PI), Alenka Malej (co-PI), Ioannis Karakassis (co-PI), Helen Pickering (co-PI), Ken Collins (co-PI), Sonja Lojen (co-PI).	BIOFiltration and Aquaculture (BIOFAQs): an evaluation of hard substrate deployment performance within mariculture developments	European Union – FP5 (C)	€2,100,000	2000 – 2003
PI		Examining the diversity of nitrifying bacteria in recirculating aquaculture systems	MIT Sea Grant and WHOI Sea Grant (C)	\$15,000	2001 – 2002
Co-PI	Hauke Kite-Powell (PI), Heidi Clark(co-PI), Porter Hoagland (co-PI), Di Jin (co-PI)	Mitigating the effects of excess nutrients in coastal waters through bivalve aquaculture and harvesting.	CICEET (The Cooperative Institute for Coastal and Estuarine Environmental Technology), NOAA, USA (C)	\$232,642	2003 – 2005

Co-PI	Daniel Cheney (PI), Ralph Elston(co-PI), and 8 other (co-PIs) from the USA	National Marine Aquaculture Initiative: Environmental and technical assessment of alternative shellfish production methods	National Sea Grant College Program, NOAA, USA (C)	\$142,083	2004 – 2006
Co-PI	Kenny Black (PI), David Whitmarsh (co-PI), and 13 other partners (co-PIs) from EU member and associated member states	ECASA: Ecosystem Approach for Sustainable Aquaculture	European Union (FP6 STREP) (C)	€2,486,250	2004 – 2007
Co-PI	Tom Hopkins (PI), Denis Bailey (PI) and 50 other partner institutes (co-PIs) from 23 EU member and associated member states	SPICOSA: Science and policy integration for coastal ecosystem assessment	European Union (FP6 Integrated Project) (C)	€10,000,000	2006 – 2010
Co-PI	Vincenzo Zonno (PI) and 24 partners (co-PIs) from EU and non-EU countries	AquAgris: Environmental management reform for sustainable farming, fisheries and aquaculture	European Union (FP6 Coordination Action) (C)	€899,671	2006 – 2009
Co-PI	Francisco Cárcamo (PI), Carlos Hernández (co-PI), Alejandro Chávez (co-PI), Mario Maldonado (co-PI), Luis Klaassen (co-PI), Héctor Novoa (co-PI)	Development of knowledge and procedures for remediation of ecosystems affected by mariculture	Chilean Economic Development Agency	€600,400	2006 – 2009
Co-PI	Peter Krost (PI), Mohammad Badran (co-PI)	Societal security and environmental impacts concerning mariculture in the Red Sea (C)	NATO - Science for Peace	€260,000	2007 – 2010

Co-PI	Eran Vigoda-Gadot (PI), Horst Sterr (PI), Peter Krost (co-PI)	Socio-political aspects of marine aquaculture: A comparative study of policymaking in Germany and Israel (C)	The German Israeli Foundation for Scientific Research and Development (GIF)	€185,750	2008 – 2011
Co-PI	Gianluca Sara (PI), Branko Glamuzina (co-PI).	INTERMED - The impact of climate change on Mediterranean intertidal communities: losses in coastal ecosystem integrity and services (C)	CIRCLE-MED, European Union FP7 ERA-Net	€135,000	2008 – 2010
Co-PI	Maeve Kelly (PI), Yannis Kotzamanis (co- PI), Céline Rebours (co-PI), Hui Liu (China) (co-PI),, Philip Heath (co-PI), Silas S.O. Hung (co-PI)	IRC-IMTA - An international research consortium for promoting and developing integrated multi- trophic aquaculture (C)	European Union International Research Staff Exchange Scheme (IRSES) - Marie Curie Actions	€309,600	2009 – 2012
Co-PI	Evangelos Papathanassiou (PI) and 53 partner institutes (co-PIs) from EU member and associated member states	PERSEUS - Identification and impact assessment of natural and human-induced pressures on the Mediterranean and Black Seas. (C)	EU-FP7	€12,999,000	2011 – 2015
* Co-PI	Kenny Black (PI) and 15 partner institutes (co-PIs) from EU member and associated member states	IDREEM - Increasing industrial resource efficiency in European mariculture (C)	EU-FP7	€5,900,000	2012 – 2016

** Co-PI	Jamileh Javidpour (PI), and co-PI's from 14 other EU and non-EU countries	GoJelly - A gelatinous solution to plastic pollution (C)	EU-Horizon 2020	€5,998,000 (HU - €486,000)	2018 – 2022
** Co-PI	Asa Espmark (PI), and co-PI's from 31 other EU and non-EU countries	FutureEUAqua - Future growth in sustainable, resilient and climate friendly organic and conventional European aquaculture (C)	EU-Horizon 2020	€6,000,000 (HU – €263,625)	2018 – 2022

9b. Research Proposals - Pending

Role	Other Researchers (Name & Role)	Title	Funded by	Years
**Co-PI	Maria-Pia Miglietti, Hui Liu, Tamar Lotan	Drivers of jellyfish blooms in the Gulf of Mexico and the Eastern Mediterranean Sea	NSF-BSF	2019-2022
**PI	Erick Fredj, Anna Brook, Dor Edelist (co-PIs)	Elucidating the sources of plastic litter on Israeli beaches (C)	Israel Ministry of Environment	2019-2022
**Co-PI	Nir Becker (PI)	Exploring the technical and economic feasibility of two hydroponic techniques for treating aquaculture effluents and sludge: Hydroponic rafts, and a bio-reactor transforming sludge into fertilizer (C)	Israel Ministry of Agriculture	2019-2020

10.Scholarships, Awards and Prizes

1987 - Sigma Xi Grant-in-Aid of Predoctoral Research - \$1,000

1988 - Sigma Xi Grant-in-Aid of Predoctoral Research - \$1,000

1989 - Office of Naval Research - \$ 2,500 toward Marine Ecology Course, Marine Biological Laboratory, Woods Hole, Massachusetts, USA

1990 - Gershon Meyerbaum foundation - \$ 15,000 postdoctoral (see 2b) scholarship in oceanography at the National Center for Mariculture, Eilat

2005 – 2012 University of Haifa Research Authority seed grants in support of proposal writing; 3 grants in aid (4,000 – 5,000 NIS, each)

11. Teaching

a. Courses Taught in Recent Years

Year	Name of Course	Type of Course	Level	Number of Students
2005 – 2015	Marine & Coastal Pollution	Lecture	B.A. & M.A.	5 - 20
2006, 2011	Environment-Aquaculture Interactions	Lectures & practicum, International Course – CIHEAM, Murcia, Spain.	Academics and professionals	40
2007	Introduction to Environmental Sciences	Lecture	B.A.	40
2007	Coastal Management	Lecture	B.A. & M.A.	10
2007 – 2015	Climate Change Effects on Marine Communities	Lecture	B.A. & M.A.	7 - 20
* 2013	Marine Fisheries and Aquaculture	Lecture	M.A.	7 - 10
* 2014	Oceanography	Lecture	M.A.	6
* 2014 - 2017	Laboratory Methods in Marine Biology	Introduction Course (Mandatory)	M.A.	22
* 2013 - present	Research Cruise	Practical course, at sea, with projects & cruise reports	M.A. & Ph.D.	16 - 30
* 2014 - present	Mediterranean Sea	Introduction Course (Mandatory)	M.A.	26
* 2014 - 2017	Departmental Fieldtrips	Fieldtrips, with reports	M.A.	10 - 25
** 2018	Innovations in Marine Science	Seminar	M.A.	12
** 2018	Departmental Multi-Disciplinary Seminar	Seminar	M.A.	30 - 50

b. Supervision of Graduate Students

b1. MA/MSc Students

	Name of Student	Other Supervisors	Title of Thesis	Degree (University)	Year of Completion / In Progress	Students' Achievements
1	Timor Katz	Barak Herut, Amatzia Genin	The use of grey mullets to ameliorate organically-enriched sediments in the oligotrophic Gulf of Aqaba (Red Sea)	MSc (Hebrew University)	2000	(D. 13);(D. 20)
2	Michal Strauss	Avital Gasith	The use of meiofauna as an indicator for organic enrichment associated with mariculture in the Northern Gulf of Eilat, Red Sea.	MSc (Tel Aviv University)	2000	
3	Philip Nemoy	Ehud Spanier, nadav Kashtan	Sponge ecology: historical aspects and recent findings from the Mediterranean coast of Israel	MA	2009	(I.4) Graduated summa cum laude & received awards for excellence
4	Irina Korchenkov	Eran Vigoda-Gadot	Factors affecting public attitudes toward aquaculture in Israel	MA	2009	(D. 29)
5	Tali Nitzan	Shlomit Paz	The effect of temperature on the relative levels of heat shock proteins in the intertidal gastropod <u>Littorina punctata</u>	MA	2010	
6	Jonathan Liberzon	Yochai Carmel	Seasonal dynamics of chromophoric dissolved organic matter in Lake Kinneret	MSc (Technion)	2010	(D.40)
7	Noa Nakar	Dafna Disegni-Eshel	Jellyfish impact on fisheries and planula settlement dynamics of the Scyphozoan medusa <u>Rhopilema nomadica</u> on the Mediterranean coast of Israel	MA	2011	(F.11) Graduated cum laude and received awards for excellence
8	* Shai Oron	Moshe Kiflawi, Sigal Abramovich, Beverly Goodman-Tchernov	Diagenesis of organic matter and its effects on benthic foraminifera in the Red Sea	MSc (Ben Gurion University)	2012	(D.34) Graduated cum laude and received awards for excellence

9	* Dafna Israel		Can artificial reefs reduce the environmental effects of aquaculture in Skutulsfjordur, Iceland?	MA (University of Westfjords, Iceland)	2012	(D.43)
10	* Avichai Bar Lev		Elucidating the swimming behavior patterns of the bloom-forming scyphomedusan, <u>Rhopilema nomadica</u>	MA	In Progress	
11	* Itzhak Levy	Gil Gambash, Yaron Tikochinsky	Ecology and diversity of rays (batoidea) in Israeli coastal waters	MA	2016	
12	* Maura Schonwald	Simona Katab-Naim	Ecological effects of marine excavations on surrounding biota	MA	2018	
13	* Eric Solie	Dov Zviely	Effect of sand nourishment on shallow subtidal marine communities in the Eastern Mediterranean	MA	In Progress	
14	* Ori Shapira	Dov Zviely	Morphodynamic and sedimentological characteristics of the Sharon coast of Israel and their effect on reproductive success of loggerhead sea turtle <u>Caretta caretta</u>	MA	2017	Graduated cum laude and received awards for excellence
15	* Hassan Shama	Nurit Kress	Characterization and quantification of phosphorus and nitrogen in marine sediments at the Shafdan outfall and assessing their impact on the macro benthic fauna	MA	2017	
16	** Tuvia Dulin	Simona Katab-Naim	The biological composition of rhodoliths near the Akhziv Islands, Eastern Mediterranean	MA	2018	
17	** Dina Shulkis	Dan Kerem	Impact of microplastic pollutants on marine turtles	MA	In Progress	
18	** Maisa Mantsur	Simona Katab-Naim, Ahuva Almogi	Environmental conditions reconstruction of the Tannim and Alexander stream estuaries in the context of accelerated human settlement during the Late Holocene	MA	In Progress	

19	** Mervat Mansour	Dor Edelist	Temporal dynamics of coastal fisheries as recounted by fishers from Akko	MA	In Progress	
20	** Ofra Raveh	Eyal Rahav	The effect of nitrate enrichment on coastal microbial populations in the southeastern Mediterranean Sea	MA	In Progress	
21	** Bothaina Shehady		Seasonal dynamics of chaetognaths in the shallow waters of the Mediterranean coast of Israel	MA	In Progress	Received awards for excellence
22	** Yael Shai	Eyal Rahav	The effect of petroleum pollutants on marine microbial populations in the South-Eastern Mediterranean Sea; examining the potential for oil spill bioremediation	MA	In Progress	Received awards for excellence

b. 2. PhD Students

	Name of Student	Other Supervisors	Title of Thesis	Degree (University)	Year of Completion / In Progress	Students' Achievements
1	* Mia Elasar	Dan Kerem, Michael Lazar	The Achziv Canyon (Eastern Mediterranean) and its influence on the local hydrography and food web	PhD	2016	(I.3)
2	* Zafrir Kuplik	Dan Kerem	Proliferation of the scyphomedusa <i>Rhopilema nomadica</i> in the eastern Mediterranean: Efficiency in resource exploitation in an oligotrophic environment	PhD	2018	(D.41); (I.2)
3	* Dafna Israel	Ingrid Lupatsch	Biofiltration of fish-farm wastes at eastern Mediterranean net-cage fish farms as a means to boost sustainability	PhD	2017	(K5)

4	* Philip Nemoy	Ehud Spanier	Application of marine sponges (Porifera) as a means to establish sustainable aquaculture	PhD	2018	(K2)
5	** Noam van der Hall		Microplastic pollution in Israeli Coastal waters and their effects on marine biota	PhD	In Progress	F13; D44; F14
6	** Ayana Perlberg-Bennet	Shirra Freeman	Sustainability aspects of the relationship between marine environment and coastal aquaculture in Israel	PhD	In Progress	(D.45)
7	** Hila Dror		Early developmental stages of the scyphomedusa <u>Rhopilema nomadica</u> and their effect on its proliferation in the eastern Mediterranean	PhD	In Progress	
8	** Asael Greenfeld	Nir Beker, Janet Bornman	Environmental and economic considerations in large scale aquaponics: Comparison of aquaponics industries in Australia and Israel	PhD	In Progress	

PUBLICATIONS

A. Ph.D. Dissertation

Title: The microbial ecology of colonial radiolaria

Date of submission: September 1, 1989

Number of pages: 244

Language: English

Name of supervisor: Neil Swanberg and O. Roger Anderson

University: City University of New York

Publications: D2, D3.

- Note:

For joint publications: first author is the main contributor, last author is usually the group head, the rest appear according to their relative contribution (unless otherwise specified).

B. Scientific Books (Refereed) - Authored

None

Edited Books - Published

1. Purcell, J.E. and **D.L. Angel** (eds). 2010. *Jellyfish Blooms: New Problems and Solutions*, Springer Publications ISBN 978-90-481-9540-4. 234 pp

C. Monographs

None

Index:

IF = Impact Factor

R = Ranking

Q = Quartile

(Source: Journal Citation Reports (JCR); Year of publication, except for D49 from SJR - Scimago Journal Ranking)

= Student

*** represents activities since appointment to Senior Lecturer**

**** represents activities since tenure**

D. Articles in Refereed Journals **Published**

1. Anderson, O.R., Bennett, P., **Angel, D.L.** and M. Bryan. 1989. Experimental and observation studies of radiolarian physiological ecology. 2. Trophic activity and symbiont primary productivity of *Spongaster tetrastetas* with comparative data on predatory activity of some Nassellaridae. *Marine Micropaleontology* 14: 267-273.
IF (1997)=1.184; R=5/24 (Q1) in Paleontology [1997 is the earliest year of IF available]
2. Spero, H.J. and **D.L. Angel**. 1991. Planktonic sarcodines: microhabitat for oceanic dinoflagellates. *Journal of Phycology* 27: 187-195.
IF (1997)=1.847; R=22/139 (Q1) in Plant Sciences, 4/68 (Q1) in Marine & Freshwater Biology [1997 is the earliest year of IF available]
3. **Angel, D.L.** 1991. Carbon flow within the colonial radiolarian microcosm. *Symbiosis* 10: 196-217.
IF (1997)=0.918; R=50/73 (Q3) in Microbiology [1997 is the earliest year of IF available]
4. Gordon, N., **Angel, D.L.**, Neori, A., Kress, N. and B. Kimor. 1994. Heterotrophic dinoflagellates with symbiotic cyanobacteria and nitrogen limitation in the Gulf of Aqaba. *Marine Ecology Progress Series* 107: 83-88.
IF (1997)=1.923; R=16/86 (Q1) in Ecology, 2/68 (Q1) in Marine & Freshwater Biology [1997 is the earliest year of IF available]
5. Kress, N., Herut, B. and **D.L. Angel**. 1996. Environmental conditions of the water column in Haifa Bay, Israel, during September-October 1993. *Water Science Technology* 32: 57-64.
IF (1997)=0.775; R=53/117 (Q2) in Environmental Sciences, 16/44 (Q2) in Water Resources, 7/58 (Q1) in Engineering, Civil [1997 is the earliest year of IF available]
6. Porter, C.P., Krost, P., Gordin, H. and **D.L. Angel**. 1996. Grey mullet (*Mugil cephalus*) as a forager of organically enriched sediments below marine fish farms. *The Israel Journal of Aquaculture - Bamidgeh* 48: 47-55.
IF (1997)=0.244; R=25/28 (Q4) in Fisheries [1997 is the earliest year of IF available]
7. Neori, A., Krom, M.D., Ellner, S.P., Boyd, C.E., Popper, D., Rabinovitch, R., Davison, P.J., Dvir, O., Zuber, D., Ucko, M., **Angel, D.L.** and H. Gordin. 1996. Seaweed biofilters dependably maintain quality of recirculated water in integrated fish-seaweed culture units. *Aquaculture* 141: 183-199.
IF (1997)=0.996; R=7/28 (Q1) in Fisheries, 27/68 (Q2) in Marine & Freshwater Biology [1997 is the earliest year of IF available]
8. Herut, B., Shoham-Frider, E., Kress, N., Fiedler, U. and **D.L. Angel**. 1998. Hydrogen peroxide production rates in clean and polluted coastal marine waters of the Mediterranean, Red and Baltic Seas. *Marine Pollution Bulletin* 36:994-1003.
IF (1998)=1.317; R=25/126 (Q1) in Environmental Sciences, 22/68 (Q2) in Marine & Freshwater Biology
9. Zohary, T., Brenner, S., Krom, M.D., **Angel, D.L.**, Kress, N., Li, W.K.W., Neori, A. and T.Z. Yacobi. 1998. Buildup of microbial biomass during deep winter mixing in a Mediterranean warm-core eddy. *Marine Ecology Progress Series* 167:47-57.
IF (1998)=2.038; R=22/89 (Q1) in Ecology, 5/68 (Q1) in Marine & Freshwater Biology

10. **Angel, D.L.**, Krost, P. and W. Silvert. 1998. Describing benthic impacts of fish farming with fuzzy sets: Theoretical background and analytic methods. *Journal of Applied Ichthyology* 14: 1-8.
IF (1998)=0.443; R=25/30 (Q4) in Fisheries, 59/68 (Q4) in Marine & Freshwater Biology
11. **Angel, D.L.**, U. Fiedler, U., Eden, N., Kress, N., Adelung, D. and B. Herut. 1999. Catalase activity in macro and micro-organisms as an indicator of biotic stress in coastal waters of the eastern Mediterranean Sea. *Helgoland Marine Research* 53: 209-218.
IF (2000)=0.750; R=47/71 (Q3) in Marine & Freshwater Biology, 20/38 (Q3) in Oceanography [2000 is the earliest year of IF available]
12. **Angel, D.L.**, Verghese, S., Lee, J.J., Saleh, A.M., Zuber, D., Lindell, D. and A. Symons. 2000. Impact of a net cage fish farm on the distribution of benthic foraminifera in the northern Gulf of Eilat (Aqaba, Red Sea). *Journal of Foraminiferal Research* 30: 54-65.
IF (2000)=1.193; R=8/27 (Q2) in Paleontology
13. #Katz, T., Herut, B., Genin, A. and **D.L. Angel**. 2002. Grey mullets ameliorate organically-enriched sediments below a fish farm in the oligotrophic Gulf of Aqaba (Red Sea). *Marine Ecology Progress Series* 234:205-214.
IF (2002)=2.222; R=29/101 (Q2) in Ecology, 6/73 (Q1) in Marine & Freshwater Biology
14. **Angel, D.L.**, Eden, N., Breitstein, S., Yurman, A., #Katz, T., and E. Spanier. 2002. In situ biofiltration: a means to limit the dispersal of effluents from marine finfish cage aquaculture. *Hydrobiologia* 469:1-10.
IF (2002)=0.694; R=51/73 (Q3) in Marine & Freshwater Biology
15. **Angel, D.L.** and Spanier, E. 2002. An application of artificial reefs to reduce organic enrichment caused by net cage fish farming: preliminary results. *ICES Journal of Marine Science* 59:1-6.
IF (2002)=1.762; R=4/37 (Q1) in Fisheries, 12/73 (Q1) in Marine & Freshwater Biology, 11/41 (Q2) in Oceanography
16. Bongiorni, L., Shafir, S., **Angel, D.L.** and B. Rinkevich. 2003. Survival, growth and reproduction of hermatypic corals subjected to *in situ* fish farm nutrient enrichment. *Marine Ecology Progress Series* 253:137-144.
IF (2003)=2.135; R=27/105 (Q2) in Ecology, 6/74 (Q1) in Marine & Freshwater Biology
17. Rinkevich, B., **Angel, D.L.**, Shafir, S. and L. Bongiorni. 2003. 'Fair is foul and foul is fair': response to a critique. *Marine Ecology Progress Series* 261: 305-309.
IF (2003)=2.135; R=27/105 (Q2) in Ecology, 6/74 (Q1) in Marine & Freshwater Biology
18. Lupatsch, I., #Katz, T. and **D.L. Angel**. 2003. Removal of fish farm effluents by grey mullets: a nutritional approach. *Aquatic Living Resources* 34:1367-1377.
IF (2003)=0.766; R=23/39 (Q3) in Fisheries

19. Eden, N., #Katz, T. and **D.L. Angel**. 2003. The impact of net cage fish farms on *Nassarius* (*Niotha*) *sinusigerus* distribution in the Gulf of Eilat (Aqaba), Red Sea. *Marine Ecology Progress Series* 263:139-147.
IF (2003)=2.135; R=27/105 (Q2) in Ecology, 6/74 (Q1) in Marine & Freshwater Biology
20. Lojen, S. Spanier, E., Tsemel, A., #Katz, T., Eden, N. and **D.L. Angel**. 2005. $\delta^{15}\text{N}$ as a natural tracer of particulate nitrogen effluents released from marine aquaculture. *Marine Biology* 148:87-96.
IF (2005)=1.754; R=15/77 (Q1) in Marine & Freshwater Biology
21. Cook, E.J., Black, K.D., Sayer, M.D.J., Cromey, C.J., **Angel, D.L.**, Spanier, E., Tsemel, A., #Katz, T., Eden, N., Karakassis, I., Tsapakis, M., Apostolaki, E. and A. Malej. 2006. The influence of caged mariculture on the early development of sub-littoral fouling communities: a pan-European study. *ICES Journal of Marine Science* 63:637-649.
IF (2006)=1.469; R=12/41 (Q2) in Fisheries, 30/79 (Q2) in Marine & Freshwater Biology, 18/48 (Q2) in Oceanography
22. Tsemel, A., Spanier, E. and **D.L. Angel**. 2006. Benthic communities of artificial structures: effects of mariculture in the Gulf of Aqaba (Eilat) on development and bioaccumulation. *Bulletin of Marine Science* 78: 103–113.
IF (2006)=1.093; R=42/79 (Q3) in Marine & Freshwater Biology, 26/48 (Q3) in Oceanography
23. Borja, A., Germán Rodríguez, J., Black, K.D., Bodoy, A., Emblow, C., Fernandes, T.F., Forte, J., Karakassis, I., Muxika, I., Nickell, T.D., Papageorgiou, N., Pranovi, F., Sevastou, K., Tomassetti, P. and **D.L. Angel**. 2009. Assessing the suitability of a range of benthic indices in the evaluation of environmental impact of fin and shellfish aquaculture located in sites across Europe. *Aquaculture* 293: 231-240.
IF (2009)=1.925; R=8/42 (Q1) in Fisheries, 23/88 (Q2) in Marine & Freshwater Biology
24. Wynne, M.J, Verbruggen, H., and **D.L. Angel**. 2009. The recognition of *Caulerpa integerrima* (Zanardini) comb. et stat. nov. (Bryopsidales, Chlorophyta) from the Red Sea. *Phycologia* 48: 291-301.
IF (2009)=1.218; R=87/173 (Q3) in Plant Sciences, 49/88 (Q2) in Marine & Freshwater Biology
25. Fuentes, V., **Angel, D.L.**, Bayha, K.M., Atienza, D., Edelist, D., Bordehore, C. and J.E. Purcell. 2010. Blooms of the invasive ctenophore, *Mnemiopsis leidyi*, span the Mediterranean Sea in 2009. *Hydrobiologia* 645:23-37.
IF (2010)=1.964; R=26/93 (Q2) in Marine & Freshwater Biology
26. *Black, K.D., Calder, L.A., Nickell, T.D., Sayer, M.D.J., Orr, H., Brand, T., Cook, E.J., Magill, S., #Katz, T., Eden, N., Jones, K.J., Tsapakis, M. and **D.L. Angel**. 2012. Chlorophyll, lipid profiles and bioturbation in sediments around a fish cage farm in the Gulf of Eilat, Israel. *Aquaculture* 345: 4-49.
IF (2012)=2.009; R=11/50 (Q1) in Fisheries, 34/100 (Q2) in Marine & Freshwater Biology

27. *Freeman, S., Vigoda-Gadot, E., Sterr, H., Schultz, M., #Korchenkov, I., Krost, P. and **D.L. Angel**. 2012. Public attitudes towards marine aquaculture: A comparative analysis of Germany and Israel. *Environmental Science and Policy* 22: 60-72.
IF (2012)=2.978; R=41/210 (Q1) in Environmental Sciences
28. *Sarà, G., Prusina, I., Milanese, M., **Angel, D.L.**, Glamuzina, B., Nitzan, T., Freeman, S., Rinaldi, A., Palmeri, V., Montalto, V., Lo Martire, M., Gianguzza, P., Arizza, V., De Pirro, M., Helmuth, B., Murray, J., DeCantis, S. and G.A. Williams. 2012. The impact of climate change on Mediterranean intertidal communities: losses in coastal ecosystem integrity and services. *Regional Environmental Change*, published on-line, October 2012. {*Regional Environmental Change* (2014) 14:S5–S17}.
IF (2014)=2.628; R=66/223 (Q2) in Environmental Sciences, 11/100 (Q1) in Environmental Studies (SSCI)
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E. Articles or Chapters in Scientific Books **(which are not Conference Proceedings)**

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2. **Angel, D.L.**, Katz, T., Eden, N., Spanier, E. and K.D. Black. 2005. Damage control in the coastal zone: improving water quality by harvesting aquaculture-derived nutrients. In: E. Levner, I. Linkov and J.M. Proth (eds), *Strategic Management of Marine Ecosystems*, Springer, p. 77-87.
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4. **Angel, D.L.** and S. Freeman. 2009. Integrated aquaculture (INTAQ) as a tool for an ecosystem approach to the marine farming sector in the Mediterranean Sea. In D. Soto (ed.). *Integrated marine aquaculture: a global review. FAO Fisheries and Aquaculture Technical Paper. No. 529*. Rome, FAO, p. 133-183.
5. Troell M, Buck BH, Angel D, Chopin T (2012) Possibilities for the development of IMTA, combined with other activities, in offshore environments. In: Chopin T, Neori A, Robinson S, Troell M (eds). *Integrated multi-trophic aquaculture (IMTA) or the turquoise revolution: a greener ecosystem approach to the blue revolution*. Springer, Berlin, P.
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7. ***Angel, D.L.** and S. Freeman. 2011. Interaction of aquaculture with other uses of the coastal zone. In GFCM. 2011. *Site selection and carrying capacity in Mediterranean marine aquaculture: key issues (WGSC-SHoCMed)*. p. 79-88. GFCM:XXXV/2011/Dma.9. (Also available at: http://gfcmsitestorage.blob.core.windows.net/documents/web/GFCM/35/GFCM_XXXV_2011_Dma.9.pdf)
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10. **Macias, J.C., Ávila-Zaragoza, P., Karakassis, I., Sánchez Jerez, P., Massa, F., Fezzardi, D., Yücel Gier, G., Franičević, V., Borg, J.A., Chapela Pérez, R.M., Tomassetti, P., **Angel, D.L.**, Marino, G., Nhhala, H., Hamza, H., Carmignac, C. & Fourdain, L. 2017. Establishment of allocated zones for aquaculture (AZAs). Guide for establishing coastal zones dedicated to aquaculture in the Mediterranean and Black Sea area. Studies and Reviews. General Fisheries Commission for the Mediterranean. No 97. Rome, FAO. 98pp.

F. Articles in Conference Proceedings

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1. **Angel, D.L.**, Krost, P., Zuber, D. and Neori, A. 1992. Microbial mats mediate the benthic turnover of organic matter in polluted sediments in the Gulf of Aqaba. *Editors - Lea Saar and George Kissil. Proceedings of the U.S-Israel Workshop on Mariculture and the Environment*, p. 66-73. Eilat, Israel - June 8 - 10, 1992
2. **Angel, D.L.**, Eden, N. and Susel, L. 1995. The influence of environmental variables on *Halophila stipulacea* growth. *European Aquaculture Society* 25: 103-128
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4. Wust-Bloch, G. H. 1997. (ed.) with contributions of Amit, R.; **Angel, D.L.**; Hadad, A.; Enzel, Y.; Heimann, A.; Yechieli, Y.; Marco, S.; Steinitz, G.; Wachs, D.; Wust, H.; Zilberbrand, M.; Zilberman, E. and Zuber, D.: The Nuweiba earthquake (22.11.1995): Post-seismic analysis of failure features and seismic hazard implications. Israel Geological Survey, Special report 3/97, 59 pp.
5. Baptist, M., Silvert, W., **Angel, D.L.** and Krost, P. 1997. Assessing benthic impacts of fish farming with an expert system based on neural networks. *Editors - G.T. Wallace and E. F. Braasch - Proceedings of the Gulf of Maine Ecosystem Dynamics Scientific Symposium and Workshop*, Regional Association for Research on the Gulf of Maine (RARGOM) Report, 97-1, p. 313-327. New Hampshire, USA - June 10, 1997

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9. **Angel, D.L.** 2004. Integrated aquaculture - variations on the theme of biofiltration. *Bulletin of the Aquaculture Association of Canada* 104: 20-25.
10. Soto, D., Aguilar-Manjarrez, J., Brugère, C., **Angel, D.L.**, Bailey, C., Black, K., Edwards, P., Costa-Pierce, B., Chopin, T., Deudero, S., Freeman, S., Hambrey, J., Hishamunda, N., Knowler, D., Silvert, W., Marba, N., Mathe, S., Norambuena, R., Simard, F., Tett, P., Troell, M. & Wainberg, A. 2008. Applying an ecosystem-based approach to aquaculture: principles, scales and some management measures. In D. Soto, J. Aguilar-Manjarrez and N. Hishamunda (eds). Building an ecosystem approach to aquaculture. FAO/Universitat de les Illes Balears Expert Workshop. 7–11 May 2007, Palma de Mallorca, Spain. *FAO Fisheries and Aquaculture Proceedings*. No. 14. Rome, FAO. pp. 15–35.
11. *Nakar, N., Disegni, D., and **D.L. Angel**. 2011. Economic evaluation of jellyfish effects on the fishery sector—Case study from the eastern Mediterranean. In *Proceedings of the Thirteenth Annual BIOECON Conference* pp. 11-13.
12. ***Angel, D.L.** and D. Edelist. 2013. Sustainable development of tropical marine aquaculture off-the-coast and offshore. In: Lovatelli, A., Aguilar-Manjarrez, J. & Soto, D., eds. Expanding mariculture farther offshore: technical, environmental, spatial and governance challenges. FAO Technical Workshop, 22–25 March 2010, Orbetello, Italy. *FAO Fisheries and Aquaculture Proceedings* No. 24. Rome, FAO. p. 173 – 200.

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14. **Van Der Hal, N., Yeruham, E. and **D.L. Angel**. 2018. Dynamics in microplastic ingestion during the past six decades in herbivorous fish on the Mediterranean Israeli coast. In: Cocca, M., Di Pace, E., Errico, M.E., Gentile, G., Montarsolo, A., Mossotti, R., eds., Proceedings of the International Conference on Microplastic Pollution in the Mediterranean Sea, Springer p.159-165.

G. Entries in Encyclopedias (Refereed)

1. ***Angel, D.L.** 2012. Sustainable marine aquaculture in the Mediterranean. In: Robert A. Meyers (ed.), Encyclopedia of Sustainability Science and Technology, DOI 10.1007/978-1-4419-0851-3, Springer Science+Business Media LLC, 18 pp
2. *Troell, M., Buck, B.H., **Angel, D.L.** and T. Chopin. 2014. Possibilities for the development of integrated multi-trophic aquaculture (IMTA), combined with other activities, in offshore environments. In: Meyers, Robert A. (Ed.), Encyclopedia of Sustainability Science and Technology, 10pp

H. Other Scientific Publications

a. Published Papers in Indexed Journals, not peer-reviewed

1. **Angel, D.L.**, Eden, N., #Katz, T., and E. Spanier. 2003. Mariculture-environment interactions and biofiltration in oligotrophic Red Sea waters. *Annales Series Historia Naturalis* 13: 33-36.
2. Spanier, E., Tsemel, A., Lubinevski, H., Roitemberg, A., Yurman, A., Breitstein, S., **Angel, D.L.**, Eden, N. and T. Katz. 2003. Can open water bio-filters be used for the reduction of the environmental impact of finfish net cage aquaculture in the coastal waters of Israel? *Annales Series Historia Naturalis* 13: 25-28.
3. **# Bennett, A., Freeman, S. and **D.L. Angel**. 2016. Aquaculture in Israel and the ecosystem services it provides. *Fishing and Fisheries* (in Hebrew) 2: 2020-2030.

b. Published Guidelines for Sustainable Aquaculture (with my contributions)

1. IUCN 2007. *Guide for the Sustainable Development of Mediterranean Aquaculture 1. Interactions between Aquaculture and the Environment*. Gland, Switzerland and Málaga, Spain: IUCN. 303 p.
2. IUCN 2009. *Guide for the Sustainable Development of Mediterranean Aquaculture. 2. Aquaculture site selection and site management*. Gland, Switzerland and Malaga, Spain. VIII + 319 p.
3. IUCN2009. *Guide for the Sustainable Development of Mediterranean Aquaculture. 3. Responsible Aquaculture Practices & Certification*. Gland, Switzerland and Malaga, Spain, 66 p.
4. FAO. 2010. Aquaculture development. 4. *Ecosystem approach to aquaculture*. FAO Technical Guidelines for Responsible Fisheries. No. 5, Suppl. 4. Rome, FAO. 53 p.
5. * ICES. 2014. Report of the Joint CIESM/ICES Workshop on *Mnemiopsis* Science (JWMS), 18–20 September 2014, A Coruña, Spain. ICES CM. 2014/SSGHIE: 14. 80 pp.

Research & Case Reports

1. Neori, A. and **D.L. Angel**. 1990 - 1991. *Annual Report* of the Water Quality Group. National Center for Mariculture, Israel Oceanographic and Limnological Research, Ltd
2. **Angel, D.L.** and A. Neori. 1992 - 1993. *Annual Report* of the Water Quality and Algal Physiology Group. National Center for Mariculture, Israel Oceanographic and Limnological Research, Ltd
3. **Angel, D.L.**, Brenner, S., Golik, A. and N. Mozes. 1993. *Environmental Impact Assessment* for the Dagsuf Fish Farm in the Gulf of Aqaba. Israel Oceanographic and Limnological Research, Ltd
4. Kissil, G., **Angel, D.L.** and A. Neori. 1994. *Annual Report* of the Water Quality and Algal Physiology Group. National Center for Mariculture, Israel Oceanographic and Limnological Research, Ltd
5. **Angel, D.L.** 1995 – 2004. *Annual Reports* of the Environmental Quality Research Group. National Center for Mariculture, Israel Oceanographic and Limnological Research, Ltd
6. **Angel, D.L.**, Post, A., Brenner, S., Eden, N., Katz, T., Cicelsky, A., Lupatsch, I. 1998. *Environmental Impact Assessment* of Net Cage Fish Farming in the Gulf of Aqaba. Israel Oceanographic and Limnological Research, Ltd
7. **Final reports of all projects completed since 2000.**

I. Submitted for Publication

1. **Kuplik, Z., **Angel, D.L.** 2018. Diet and potential impact of the rhizostome *Rhopilema nomadica* on the marine food web in Israeli coastal waters. *Journal of Plankton Research* (accepted, under revision), 15 pp.
2. **Dulin, T., Avnaim-Katav, S., Sisma, G., Bialik, O., **Angel, D.L.** 2018. Macroïd beds along the Northern Israeli coast: implications for past depositional environments. *Coastal, Estuarine and Shelf Science* **9 pp.**
3. **Elasar, M, Kerem, D., Lazar, M., **Angel, D.L.** 2018. Macro-faunal abundance and diversity in Akhziv submarine canyon and adjacent slope (eastern Levantine basin, Mediterranean Sea). *Deep Sea Research*, 12 pp.
4. **Angel, D.L.**, Jokumsen, A., Lembo, G. 2018. Aquaculture production systems and environmental interactions. In: G. Lembo & E. Mente, *Organic Aquaculture Portrait*, Springer International Publishing AG, (accepted, under revision), **10 pp.**
5. **Shiganova, T., Lombard, F., Lilley, M., **Angel, D.L.**, Galil, B., Bonnet, D., Delpy, F., Sommer, U., Javidpour, J., Molinero, J.C., Okyar, M.I., Malej, A., Christou, E., Siokou, I., Marambio, M., Fuentes, V., Mirsoyan, Z., Gülsahin, N. 2018. Adaptive strategies of *Mnemiopsis leidyi* A. Agassiz, 1865 in different environments of the Eurasian Seas. *Progress in Oceanography*, 17 pp.

J. Summary of my Activities and Future Plans

My research focuses on understanding how natural changes in the sea and anthropogenic activities along the coast affect marine communities. With the development of coastal areas and the escalation of man's activities at sea, we observe increases in organic matter and nutrient loading in the marine environment. These changes in organic matter and nutrient concentrations affect water quality and alter habitats, with detrimental effects on food web and ecosystem functions. I study such impacts by monitoring environmental variables such as the composition and biomass of benthic communities, phytoplankton productivity, etc. I am interested in finding sustainable solutions to reduce anthropogenic impacts on the environment. As the oceans become enriched in nutrients there is a pressing need to find practical ways in which we may package and remove these nutrients from the system in order to reduce eutrophication and other processes that negatively impact the marine ecosystem. One of the topics that I have been studying in recent years – microplastic pollution - also falls under the broad category of marine pollution, yet it raises a suite of different problems, when compared with eutrophication. My research takes a multi-disciplinary approach, combining biogeochemistry, ecology and microbiology and incorporating socio-economic and policy considerations to: (i) study the response of marine communities to anthropogenic impacts, (ii) look for sustainable ways to ameliorate human impacts and (iii) provide the scientific basis for development of sustainable policy. In the following, I briefly describe my ongoing research and future goals.

Prior to arriving at the University of Haifa my research at the National Center for Mariculture in Eilat focused on a variety of basic and applied aspects of the interaction of marine aquaculture with benthic

and planktonic communities. My focus, initially, was on understanding the biogeochemical impacts of aquaculture on the marine environment, and encompassed such fields as microbiology, sediment geochemistry and seagrass ecology and physiology. In addition, I developed several aquaculture impact mitigation schemes such as the use of benthic artificial reefs (implemented in several countries overseas), rearing omnivorous fish in bottom enclosures, and cultivating macroalgae and sponges in the water column.

My current research on aquaculture focuses on modeling and on the quest for sustainable aquaculture practices, such as the implementation of innovative Integrated Multi-Trophic Aquaculture. In addition, I am involved in marine policy and promote the concept of multiple-use of marine structures and spaces, especially in areas that suffer from stakeholder conflicts. In light of the massive stinging jellyfish blooms that recur each summer on the Israeli Mediterranean coast and worldwide I study jellyfish biology and ecology to address the limited understanding of this phenomenon. In 2009 I established a jellyfish reporting website, www.meduzot.co.il to improve our understanding of the jellyfish bloom dynamics and it currently serves both scientists and citizens and is a model citizen science program. Another topic that I work on is the problem of microplastics in the eastern Mediterranean; their abundances, distribution and impacts on the food web. My experience with both microplastics and jellyfish has led to my involvement in the EU funded project *GoJelly* that started in 2018 and examines innovative uses of jellyfish, creating beneficial uses from a nuisance organism, and the potential use of jellyfish mucus to remove micro and nano plastics from water.

Although we have made substantial progress in marine science, there is still a lot we do not know and an improved understanding of how natural systems function and how man interacts with and affects these systems will serve as a sound basis for science-based policy and sustainable decision-making. My research in the coming years will continue to focus on sustainable management of our coasts. The continual increase in the global human population seems to generate new and serious environmental problems; many of these in the coastal zone. Most of our seas are polluted, heavily impacted by coastal development and are over-fished. These and possibly other factors, such as climate change are probably responsible for the rising tide of jellyfish and other gelatinous zooplankton that impact marine ecosystems world-wide. Thus, in addition to my ongoing research on sustainable aquaculture, I plan to expand my study of marine gelatinous zooplankton using both basic and applied approaches, as per the *GoJelly* project. I intend to continue and expand my involvement in citizen science, using the jellyfish website as a platform toward that end, with an effort to reach out and involve more and more citizens. I also plan to increase efforts to understand the impacts of micro and nano plastics on marine biota and on humans, with the hopes of finding realistic solutions to reduce marine plastic pollution.

K. In preparation (articles)

1. Kuplik, Z., Kerem, D., **Angel, D.L.** 2018. Investigation of the feeding preferences and predation rates of *Rhopilema nomadica* through In-Situ Incubation. *Journal of Plankton Research*, **8 pp.**
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