

ZVY DUBINSKY (1934–2024)

Ilana Berman-Frank , Paul Falkowski , Max von Tilzer, and Oren Levy



FIG. 1. Zvy Dubinsky at his home in Tivon, Israel (photo credit: unknown).

Professor Zvy Dubinsky passed away on 25 March 2024. Zvy was a long-time member of ASLO, a distinguished colleague, and friend of many (Fig. 1). Zvy left behind a legacy of excellent and ground-breaking science, generations of students, and extensive networks of colleagues around the world, many of whom became close friends. Zvy was also a devoted husband to Maya, father, grandfather of four, and great-grandfather of four.

Born in Barcelona in 1934, Zvy emigrated as a child to Israel where he trained as a teacher and worked for several years in developing an advanced, modern biology curriculum for high schools. In his mid-30s, he returned to study for a M.Sc. in biology at Bar-Ilan University (BIU), Israel where he investigated “The influence of select environmental factors on the abundance and composition of algal populations from Lake Kinneret (Israel)” and then continued to complete his Ph.D. (under Tom Berman’s supervision) on “Light as an ecological factor in Lake Kinneret phytoplankton dynamics.” After a postdoctoral fellowship at Queens College, New York, USA, where he focused on algal lipid physiology, biochemistry, and the potential of algae in biofuel production, Zvy accepted a faculty position at the

Department of Life Sciences at BIU where he developed a laboratory focusing on biophysical, physiological, and ecological aspects of aquatic photosynthesis. He markedly advanced the research study in the fields of phytoplankton photoacclimation and their interactions with the underwater light field, and helped develop the application of photoacoustics to directly determine photosynthetic quantum yields of any benthic phototroph. For his extensive publication list and highly cited papers, see <https://scholar.google.co.il/citations?hl=en&user=OzUQYWIAAAAJ>.

Zvy was one of the pioneers working on coral ecology and photobiology, formulating the first integration of energy and nutrient fluxes in zooxanthellate corals. In the late 1970s, Zvy’s research expeditions to the Sinai reefs became notoriously popular (Fig. 2). Professor Paul Falkowski (Rutgers University, New Jersey, USA) writes of the early years of work with Zvy,

“I first met Zvy in 1977. I had just begun my research career at Brookhaven National Laboratory, where I could explore any aspect of research that interested me. At that time I was fascinated with how single celled algae could acclimate to irradiance. When their growth light was low, cells made more photosynthetic pigments, and when light was high, the converse. Zvy told me that corals could also photoacclimate. I had no idea

what corals were. We wrote a proposal together to the NSF/BSF, about photoacclimation in corals. Amazingly, it was funded. It led to the most interesting collaboration I have had in science. Zvy taught me how corals lived. I saw corals for the first time in my life in Nabeq in the Sinai—where Israel had made the area a National Park. I was blown away.

We worked every evening from about 8 in the evening until 2 in the morning in a Bedouin coffee shop, with our portable generators making electricity for our tabletop centrifuges, the lights for our microscopes, and our spectrophotometers. The camels ate the paper coming out of the spectrophotometers (seriously).”

Zvy applied the concepts of photoacclimation and energy requirement in diverse environments which took him from the heat of the deserts to the cold Antarctic waters where he worked with Prof. Max Von Tilzer (University of Konstanz, Past Director of the Alfred Wegner Institute for Polar Research, both Germany) who wrote of Zvy:

“His continued interest in phytoplankton photosynthesis encouraged me to invite him to a cruise on the then newly built German ice-breaking vessel Polarstern during the Austral spring of 1988, within the framework of the



FIG. 2. Zvy, Paul Falkowski, and colleagues after a day of experiments on the coral reef at Nabeq, Sinai (photo credit: unknown, from Zvy’s private collection).

European Polarstern Study (EPOS). Our project on this expedition was to study the carbon and energy balance in the phytoplankton of the Southern Ocean which, with water temperatures consistently below 0°C, is the coldest part of the World Ocean. We were able to show that because respiration is more temperature-sensitive than photosynthesis, the energy balance in phytoplankton can be positive, even when radiant energy supply for photosynthesis is extremely low, owing to deep water column mixing.”

With a flourishing scientific career Zvy planned and worked on >100 research projects, including ~25 international research projects funded by a variety of competitive sources including the prestigious FP7 ERC Advanced Career Grant under which he was the Project Principal Investigator for CoralWarm (www.coralwarm.eu) which explored the impacts of anthropogenic eutrophication on coral reefs. His research also diverged to more applied projects and he established the “Algal Biotechnology Center (BIU)” initiating research on biodiesel and natural products from microalgae.

Zvy’s international scientific collaboration is literally global. His projects took him across the world to Australia, Hawaii, Antarctica, Japan, Eritrea, Seychelles, and other environments. But he also believed in building bridges closer to home and co-piloted (with Max von Tilzer) a joint Israeli–German–Arab project on the Red Sea (after the Peace Accords were signed between Egypt, Jordan, and Israel). Max continues:

“The idea behind the project was to contribute to the peace process in the Middle East, in addition to supporting science. At the time of the project, this looked rather promising. In addition to German and Israeli scientists, researchers from Jordan, Egypt, and Palestine participated. One of the Palestinian participants was Mutas Qutob who had studied at Bar Ilan University and subsequently became Professor at the Palestinian Al-Quds University in Jerusalem.”

Zvy’s prolific work resulted in ~270 scientific publications (<https://scholar.google.co.il/citations?hl=en&user=0zUQYWIAAAAJ>) and edited books, invitations to lecture around the world, and prestigious acknowledgment of his

work via numerous international editorial and advisory positions to both industry and government translating research into policy. Zvy was also a dedicated and talented teacher. He mentored ~90 graduate students (including myself - I. Berman-Frank) and postdoctoral fellows, established a new program in ecology at BIU based on hands-on desert and coral reef studies in the field, taught a wide variety of courses from plant physiology and ecology to marine photosynthesis and ecophysiology, bioenergetics, and “Man and the Biosphere.” This last course became one of the most popular courses taught at BIU annually attracting >100 students from all faculties. Zvy also headed the M.B.A. program in Management of Natural Resources, Energy and Water at the Netanya Academic College (Israel), and a M.Sc. program in Marine Science at Ruppin College/Faculty of Marine Sciences (Israel).

Oren Levy, one of his many Ph.D. students, now a professor at Bar-Ilan University, wrote of Zvy:

“When I first met Zvy in the late 90s as an undergraduate student in biology, I was immediately captivated by his distinctive academic style. He was teaching an introductory course on marine biology, and his

lectures were brimming with energy. He had a unique way of intertwining solar energy with the coral reef ecosystem and photosynthesis, explaining these complex topics with such patience and passion that I was inspired to learn more and more from him. His stories of fieldwork and global exploration ignited in me a desire to follow in his footsteps. Zvy was a true renaissance man, with passions extending beyond biology to nature, photography, art, and philosophy.

During my Ph.D. thesis under his guidance, I came to know him much more deeply as I traveled with him to Japan, Europe, and other magical places. I admired his peaceful way of living, his wisdom in addressing both big and small questions, and his remarkable ability to connect people with the nature he cherished so much.”

Zvy organized many international symposia, workshops and seminars. One of the most notable was the co-founding of the Group of Aquatic Primary Productivity (GAP) workshops to which he contributed from 1980 to 2008. GAP workshops brought together freshwater and marine scientists to plan and work together, running experiments with state-of-the-science equipment and methodologies,



FIG. 3. Zvy, Max von Tilzer, Paul Falkowski, and Tom Berman at the first GAP workshop in Konstanz (photo credit: M. Tilzer, private).



FIG. 4. Zvy and Max von Tilzer at the opening of their joint photography exhibition (photo credit: M. Tilzer, private).

analyzing data, and publishing the results in peer-reviewed journals.

Max von Tilzer writes:

“I was introduced to Zvy on the occasion of the International Limnology Congress at Kyoto in 1980 by Tom Berman, whom I had met in a similar fashion in Leningrad in 1972. This was the starting point of my life-long collaboration with Zvy. During the Kyoto Congress, Tom, Zvy, and I decided to establish the Group on Aquatic Productivity (GAP), whose format from the very beginning was organizing hands-on meetings, focusing on topics related to measuring aquatic primary production. During the early planning phase of GAP Paul Falkowski joined GAP, which substantially added to the scientific clout of the group. In 1982, the very first GAP meeting took place at Konstanz (see photo; Fig. 3). I am

happy that by now, 10 GAP-meetings have taken place.”

One of these meetings was the 8th GAP in Eilat, Israel with Zvy helping me (I. Berman-Frank) co-chair a workshop with ~100 participants and 7 experimental groups from ~20 countries. After a very successful Gala evening at the underwater observatory, Zvy unfortunately had a bicycle accident on the way back to his hotel room and spent the night in the emergency room. This did not deter him from participating throughout the workshop, weaving more international connections, and helping with all aspects of the workshop and the subsequent ~30 publications in a special issue of Aquatic Microbial Ecology and Theme Section in Aquatic Biology.

Zvy was also a talented photographer with the flair and ability to record nature and people through the lens of the camera. This led to

several exhibitions including joint exhibitions with Max von Tilzer with the last one titled “Ripples and Patterns” showing in Konstanz, Jerusalem, and at the German Embassy in Tel Aviv (Fig. 4).

Many of Zvy’s colleagues became personal friends. Paul writes:

“Our families became extremely close. Indeed, when I came home from Brookhaven, Zvy would often call me about a new idea, or to meet with him and Maya (Zvy’s wife) for lunch, or to walk along a beach. Zvy taught me to appreciate the sea. But, more than that—he projected love for the world.”

Oren Levy adds, and his sentiments are echoed by many of us – Zvy’s students, colleagues, and friends:

His (Zvy’s) legacy will live on in the hearts of those he touched and in the countless contributions he made to the field of marine biology.

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