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Research Interests

I am interested in biological oceanography, phytoplankton physiology, viral ecology, molecular ecology and trace metal and nutrient biogeochemistry. I am currently researching diatom-virus interactions. Diatoms are unicellular, eukaryotic phytoplankton and are among the most taxonomically diverse, globally distributed, and ecologically successful microorganisms in the modern ocean, contributing 40% of marine primary productivity. With a unique requirement for silicon for cell wall formation and growth, diatoms represent the largest group of siliceous organisms in the ocean, and form *the* link between the carbon and silicon (Si) cycles. As the most abundant entity in the ocean, viruses play a critical role in shaping microbial ecosystems and driving global biogeochemical cycles. I am working to understand how diatom-virus dynamics impact silicon cycling in the ocean.

Short history

I grew up in Pittsburgh, Pennsylvania. After graduating high school, I moved to Israel and completed my BSc in Biology and Environmental Sciences at the Hebrew University of Jerusalem. I continued on to do my Masters and PhD there in the Department of Environmental Sciences. My doctoral research combined analytical techniques from microbiology, molecular biology and trace metal geochemistry to study how the most numerically abundant phytoplankton, cyanobacteria, acquire iron – an essential and scarce micronutrient that critically limits primary productivity in a third of the world's ocean.

Select Publications

Kranzler, C.*, Kessler, N.*, Keren, N., Shaked, Y. Enhanced dissolution of ferrihydrite by a unicellular, planktonic cyanobacterium: a biological contribution to particulate iron bioavailability. (2016) *Environmental Microbiology* 18(12):5101-5111 *equal contribution DOI: 10.1111/1462-2920.1349

Lis, H., **Kranzler, C.**, Keren, N., Shaked, Y. (2015) A comparative study of iron uptake rates and mechanisms amongst marine and freshwater cyanobacteria: Prevalence of reductive iron uptake. *LIFE* 5:841-860. DOI:10.3390/life5010841

Lis, H., **Kranzler, C.**, Keren, N., Shaked, Y., Morel, F. (2015) Iron bioavailability to phytoplankton – an empirical approach. *ISME Journal* 9:1003-1013. DOI:10.1038/ismej.2014.199

Kranzler, C., Lis, H., Finkel, O.M., Schmetterer, G., Shaked, Y., Keren, N. (2014) Coordinated transporter activity shapes high affinity iron acquisition in cyanobacteria. *ISME Journal* 8:409-417. DOI:10.1038/ismej.2013.161

Kranzler, C., Lis, H., Shaked, Y. and Keren, N. (2011) The role of reduction in iron uptake processes in a unicellular, planktonic cyanobacterium. *Environmental Microbiology*. 13:2990 - 2999. DOI:0.1111/j.1462-2920.2011.02572.x