

## CV –Hagai Raanan

Institute of Marine and Coastal Sciences, Rutgers  
University 71 Dudley Road, New Brunswick, NJ,  
08901, USA.

Email - hraanan@marine.rutgers.edu

Phones – (848)-932-3486 (office), (732)-354-3740 (Home).

Born: 1981, Jerusalem, Israel

Citizenship: Israeli

Languages: Hebrew (mother tongue), English (very good)

### Education

2006-2008: B.Sc., Hebrew University of Jerusalem, Institute of Life Sciences, specialization in Biology, Marine Sciences.

2009-2015: Direct track Ph.D., Hebrew University of Jerusalem, Institute of Life Sciences, Department of Plant and Environmental Sciences.

**Thesis title:** Adaptation of biological soil crusts microorganisms to harsh environmental conditions. Advisor: Professor Aaron Kaplan.

### Academic employment and teaching experience:

2015-present: Post-doctoral Research Associate, with Prof. Paul Falkowski, Environmental Biophysics and Molecular Ecology Program, Institute of Earth, Ocean and Atmospheric Sciences and Prof. Vikas Nanda, Center for Advanced Biotechnology & Medicine Rutgers University. The project focuses on understanding the evolution of early electron transfer proteins and the implication for protein design.

2011- 2015 (part-time): Teaching Assistant (lab), Hebrew University of Jerusalem.

2013-Field and lab instructor - European Science Foundation COST Training School on desert biological sand crusts, NW Negev desert, Israel. (March 2013)

2010- 2011 (part-time): Teaching Assistant (lab), Jerusalem College of Engineering, Jerusalem

2005-2009: Educational Instructor, Tekoa Seminary, Israel

2000-2004: Diving instructor (part-time), Coral Sea Divers Club, Eilat, Israel

### Publications

Eli K. Moore, Benjamin I. Jelen, Donato Giovannelli, **Hagai Raanan**, Paul G. Falkowski. Metal Availability and the Expanding Redox Network of Microbial Metabolism in the Archean Eon (2017). Nature Geoscience (In press)

Murik\* Omer, Oren Nadav\*, Shotland Yoram\*, **Raanan Hagai\***, Treves Haim, Kedem Itzhak, Keren Nir, Hagemann Martin, Pade Nadin, Kaplan Aaron. What distinguishes cyanobacteria able to revive after desiccation from those that cannot: The genome aspect: Desiccation resistance genes in cyanobacteria (2016). Environmental

Microbiology. DOI: 10.1111/1462-2920.13486. \* These authors contributed equally to this study.

Martin Hagemann, Manja Henneberg, Vincent J. M. N. L. Felde, Simon M. Berkowicz, **Hagai Raanan**, Nadin Pade, Peter Felix-Henningsen, Aaron Kaplan. Cyanobacterial populations in biological soil crusts of the northwest Negev Desert, Israel – effects of local conditions and disturbance (2016). FEMS Microbiol Ecol. DOI: 10.1093/femsec/fiw228

**Hagai Raanan**, Nadav Oren; haim treves; nir keren; Itzhak Ohad; Simon Berkowicz; Martin Hagemann; Moriz Koch; Yoram Shotland and Aaron Kaplan. Towards clarifying what distinguishes cyanobacteria able to resurrect after desiccation from those that cannot: The photosynthetic aspect (2016). BBA – Bioenergetics doi: 10.1016/j.bbabi.2016.02.007.

Haim Treves, **Hagai Raanan**, Issac Kedem, Omer Murik, Nir Keren, Hagit Zer, Simon Berkowicz, Mario Giordano, Alessandra Norici, Yoram Shotland, Itzhak Ohad and Aaron Kaplan. The mechanisms whereby the green alga *Chlorella ohadii*, isolated from desert soil crust, exhibits unparalleled photodamage resistance (2016). New Phytologist. 210(4):1229-43. doi: 10.1111/nph.13870.

**Hagai Raanan**, Nadav Oren, Haim Treves, Simon M. Berkowicz, Martin Hagemann, Nadin Pade, Nir Keren and Aaron Kaplan. Simulated soil crust conditions in a chamber system provide new insights on cyanobacterial acclimation to desiccation (2016). Environmental Microbiology DOI: 10.1111/1462-2920.12998.

**Hagai Raanan**, Vincent J. M. N. L. Felde, Stephan Peth, Sylvie Drahorad, Danny Ionescu, Gil Eshkol, Haim Treves, Peter Felix-Henningsen, Simon M. Berkowicz, Nir Keren, Rainer Horn, Martin Hagemann and Aaron Kaplan (2015). Three-dimensional structure and cyanobacterial activity within a desert biological soil crust. Environmental Microbiology. DOI: 10.1111/1462-2920.12859

Leeat Bar-Eyal, Ido Eisenberg, Adam Faust, **Hagai Raanan**, Rienat Nevo, Fabrice Rappaport, Anja Krieger-Liszkay, Pierre Sétif, Aarien Thurotte, Ziv Reich, Aaron Kaplan, Itzhak Ohad, Yossi Paltiel and Nir Keren (2015). An easily reversible structural change underlies mechanisms enabling desert crust cyanobacteria to survive desiccation. Biochim Biophys Acta. 1847(10):1267-1273. doi: 10.1016/j.bbabi.2015.07.008.

Haim Treves, **Hagai Raanan**, Omri M. Finkel, Simon M. Berkowicz, Nir Keren, Yoram Shotland and Aaron Kaplan (2013). A newly isolated *Chlorella* sp. from desert sand crusts. FEMS Microbiol. Ecol., 86, 373-380.

Itzhak Ohad, **Hagai Raanan**, Nir Keren, Dan Tchernov and Aaron Kaplan (2010). Light-induced changes within photosystem II protects microcoleus sp. in biological desert sand crusts against excess light. PLoS One, 5(6): 10.1371/journal.pone.0011000

### **Conference Participation**

- Gordon Research Conference on Metallocofactors June 12 -17 2016 - Stonehill College in Easton MA United States. Poster.
- 3<sup>rd</sup> International Workshop on Biological Soil Crusts September 26-30, 2016 - Moab, Utah, USA. Oral presentation.
- European Geosciences Union General Assembly 12-17 April, 2015. Oral presentation.
- 38<sup>th</sup> Annual Conference for Science and the Environment of Israel Society of Ecology and Environmental Sciences 21-22 June Beer-Sheva, Israel. Oral presentation.
- 6<sup>th</sup> Congress of the Federation of the Israel Societies for Experimental Biology - FISEB (ILANIT) February 7-10, 2011 Eilat, Israel. Poster.
- 4<sup>th</sup> Congress of European Microbiologist FEMS Geneva, Switzerland June 26-30, 2011, Poster.
- German Research Foundation (“DFG”) International Trilateral Project meeting. “Biotic and abiotic factor affecting biological soil crust formation and recovery in a semiarid dune ecosystem: Gaza and NW Negev”, 26-29 March, 2012, Rauschholzhausen, Germany. Invited speaker.
- 14<sup>th</sup> International Symposium on Microbial Ecology, ISME14 Copenhagen, Denmark, 19-24 August 2012. FEMS travel grant recipient. Poster.
- European Science Foundation COST Conference on Action ES1104 “Arid Lands Restoration and Combat of Desertification”, 8-10 January, 2013, London, England. Invited Early Stage Researcher.
- 7<sup>th</sup> Congress of the Federation of the Israel Societies for Experimental Biology (FISEB/ILANIT), February 10-13, 2014, Eilat, Israel. Poster.
- 15<sup>th</sup> International Symposium on Microbial Ecology, ISME15 Seoul, South-Korea, 24-29 August, 2014. FEMS Travel grant recipient. Poster.

### **Other**

- Early Stage Researcher member: European Science Foundation COST Conference on Action ES1104 “Arid Lands Restoration and Combat of Desertification”
- Computer skills – Programming Lab View & Arduino, Python, Microsoft Office.
- Electronic skills – Basic electronics (DC) including microprocessors. Experience in building innovative simulation and measurement equipment.