# Ezra Orlofsky, PhD

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## SUMMARY OF SKILLS

- PhD-educated scientist/innovator adept at literature reviews, analyzing and presenting data (public speaking)
- Expert in pathogen detection using microbiological and molecular procedures (qPCR, NA extraction and sequencing, epifluorescence and confocal microscopy, biochemical triage, hybrid classical and molecular techniques)
- Skilled in a variety of plant, microbial, water and soil analytical techniques, e.g. ions, metabolites, proteins, nucleic acid and microbes
- R&D experience in constructed wetlands, nanocomposites, bioreactors and other water treatment technologies
- Proficient in Statistical and Professional Software: Statistica, R, Sigmaplot, JMP, Python
- Five-time grant and award winner

## EXPERIENCE

**Post-Doctoral Researcher,** *Prof Segula Masaphy's Lab* **Feb 2020-Present**

*Environmental Biotechnology, Migal Galilee Research Institute*

- Research and Field Work on trophic state of order *Pezizales*, based on microbiome and isotopic analysis
- Defining and analyzing microbial communities associated with specific niches using multi-level pattern analysis, beta-richness and community profiling, assigning putative ecological functions to metagenome

**Post-Doctoral Researcher,** *Prof Iggy Litaor's Lab* **July 2016-Feb 2020**

*Hydrogeochemistry Lab, Migal Galilee Research Institute, Tel-Hai, Israel*

- Head of research subgroup Nature-Based Desalination of Agro-Industrial Wastewater, 4 year study funded by BRIGAID, a Horizon 2020 Programme
- Awarded grant for Secondary metabolite extraction and quantification in halophyte *Sesuvium portulacastrum*
- Kept Migal in high standing with the EU community with numerous media (print and radio) publications, fast well-written reporting to the funding agency and impactful presentations at conferences

**Lecturer** **March 2018-present**

*Tel-Hai College; Kinneret Academic & Technological Colleges*

- Lecturer in statistics, microbiology for engineers and technicians, aquatic microbiology for MSc

**R&D Director,** *Ayala Water & Ecology, Israel* **March 2014- March 2019**

- Wrote techno-commercial proposals for establishment of constructed wetlands in private and commercial settings
- Facilitated and wrote large-scope surveys on urban river pollution in India and elsewhere, from inception (request for proposal, RFP), through tender application and finally detailed project reports (DPR). The surveys combined demographic, hydrologic, biological and soil data.
- Assisted in design, implementation and management of full-scale constructed wetlands in numerous settings ranging from thousands to millions of liters/day capacity.
- Achieved two grants from the EU: SME (Small – Medium Enterprise) and BRIGAID

## EDUCATION

**Doctor of Philosophy**, Environmental Microbiology & Hydrology **Sde Boker**, **Israel**
Ben-Gurion University of the Negev (2009-2014)

**Master of Science,** Plant Biotechnology **Sde Boker**, **Israel**
Ben-Gurion University of the Negev (2007-2009)

**Bachelor of Arts**, English Literature, Chemistry and Biochemistry **New York, USA**
Queens College, City University of New York (2004-2007)

## RELEVANT

**COURSEWORK**

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|---|---|---|---|
| Plant tissue Culture | Cytogenetics | Microbiology | Plant Substances |
| Chemistry & Biochemistry | Bioinformatics | Microscopy | Epigenetics |
| Proteins & Enzymes | Plant physiology | Oxidative Stress | Environmental Lab Techniques |
| Molecular Biology | Organic Chemistry | R | Statistics |

**LANGUAGES** English: Native speaker
Hebrew: Professional working proficiency

## PUBLICATIONS

Scientific manuscripts

1. Simultaneous detection of *Giardia lamblia* and *Cryptosporidium parvum* (oo)cysts in soil using immunomagnetic separation and direct fluorescent antibody staining. **Orlofsky E et al**. J Microbiol Meth (2013) 94:375-377
2. Assessment of pathogenic bacteria in treated graywater and irrigated soils. Benami M, Gross A, Herzberg M, **Orlofsky E**, Vonshak A, and Gillor O. Sci Total Environ (2013) 458-460, pp 298-302.
3. Rapid MPN-Qpcr Screening for Pathogens in Air, Soil, Water and Agricultural Produce. **Orlofsky E,** et al. Water Air Soil Pollut (2015) 226: 303
4. Comparable levels of microbial contamination in soil and on tomato crops after drip irrigation with treated wastewater or potable water. **Orlofsky E** et al, Agr Ecosyst Environ (2016) 215, 1:140-150
5. Sexual dimorphism in the response of *Mercurialis annua* to stress. **Orlofsky E**, et al, Metabolites (2016), 6(2), 13; doi:10.3390/metabo6020013
6. Biological reconditioning of sodium enriched zeolite by halophytes: case study of dairy farm effluent treatment. **Orlofsky E**, Chernoivanov S, Asiag A, Maor I, Levi N, Litaor MI. International Journal of Phytoremediation (2020), 1-12
7. Antibiotic resistance in soil and tomato crop irrigated with freshwater and two types of treated wastewater. Mihiret M, Lichtenberg R, **Orlofsky E**, Bernstein N, Gillor O. In Review, *Chemosphere.*
8. Using reclaimed wastewater for agriculture: Health aspects. **Orlofsky E**, Bernstein N, Gillor O. *In review, Irrigation Science*

Non-Peer Reviewed

9. Biomimetics- cutting edge environmental technologies, Yael Helfman Cohen, Shlomtzion Shen, Ezra Orlofsky. ISEES. 2017(3): 9-10 (in Hebrew) http://magazine.isees.org.il/ArticlePage.aspx?ArticleId=685
10. Agroindustrial Wastewater: from environmental menace to circular economy. Ezra Orlofsky, Simon Chernoivanov, Iggy Litaor. ICBA. 395: 106-108. https://akol.co.il/icbaapp/articles/0395/395.2018.28.pdf
11. Orlofsky, E., Chernoivanov, S., and Litaor, M.I. Nature-sourced desalination using halophyte-zeolite wetlands. Climate Innovation Window http://climateinnovationwindow.eu/innovations/nature-sourced-desalination Book

Book

**Orlofsky E** and Cohen E. Innovations in Development and Implementation of Constructed Wetlands for Wastewater Treatment. Wilk D. Ed. Inter-American Development Bank, Washington DC (Accepted, In Press)

## ADDITIONAL AWARDS, HONORS, EXPERIENCE, & CERTIFICATIONS

2009 Molcho Negev Scholorship | 2010: Israeli Water Authority fellowship | 2015: Immigrant Scientists Grant | 2018: BRIGAID EU-Horizon 2020 | 2018: EU SME Horizon 2020| 2018: ICA-Israel grant | 2019 Entrepreneurial Marketing Grant

**REFERENCES**:

Dr. Osnat Gillor. Associate Professor (Phd. Advisor) Dept of Environmental Microbiology. Ben-Gurion University of the Negev. Phone: +972 8 6596986 e-mail: gilloro@bgu.ac.il

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