

# Nitzan Soffer

Nsoffer@gmail.com 609-658-8413

---

## Education:

**Oregon State University (OSU)** Corvallis, Oregon  
PhD in Microbiology 2011- 2013  
Dissertation title: *What is killing the corals? Viral and bacterial interrogations using metagenomics and microscopy*  
Advisor: Rebecca Vega Thurber  
\*\*Transferred Fall 2011 from FIU due to advisor accepting job at OSU.

**Florida International University (FIU)** North Miami, Florida  
PhD Student in Biology\*\* 2009-2011  
Advisor: Rebecca Vega Thurber

**University of Miami, Rosenstiel School of Marine and Atmospheric Science** Miami, Florida  
MS in Marine Biology and Fisheries 2006-2009  
Thesis title: *“Practical Applications for Symbiodinium Grown on Solid Media: Culturing, Fluorometry and Transformations “*

**UC Santa Barbara, College of Creative Studies Honors** Santa Barbara, California  
BA in Creative Studies: *Emphasis in Biology, Summa Cum Laude* 2002-2005

## Relevant Research Experience:

**Graduate Research Assistant** Fall 2011- Winter 2013  
Oregon State University, Department of Microbiology Corvallis, Oregon

- Constructing and analyzing phage-bacteria interaction networks using CoNet and Cytoscape
- Planned and conducted coral viral/bacterial inoculation experiment in US Virgin Islands (including permit applications, field logistics, budgeting, experimental design, oversight of field assistants, SCUBA collections, and wetlab manipulations)
- Conducted Multiple Displacement Amplification (MDA) reactions and prepared samples for high throughput sequencing
- Analyzing viral metagenomes from corals of different health states and surrounding seawater using univariate/multivariate statistics and bioinformatics using PRIMER 6, CAMERA, GENEIOUS, GALAXY, METAVIR and BLAST
- Optimized protocols for preservation and isolation of viral RNA from corals collected in the field
- Analyzing bacterial metagenomes (16S) from diseased and healthy corals using QIIME
- Designed spirochete specific primers

**NSF Fellow/PhD Student** Fall 2009- Fall 2011  
Florida International University, Department of Biological Science North Miami, Florida

- Performed viral isolations/DNA extractions from scleractinian corals and seawater using CsCl gradients.
- Analyzed sequence using the following programs: BLAST, CLUSTAL X, DNA STAR, CAP 3, GALAXY, CAMERA, CD HIT, METAVIR, PRIMER 6

- Cloned novel virus DNA
- Performed Tangential flow filtration
- Certified in EPA Hazard Waste

### Graduate Research Assistant

University of Miami, Rosenstiel School of Marine and Atmospheric Sciences

Fall 2006- 2009  
Miami, Florida

- Developed agar medium culturing method for *Symbiodinium spp.*(dinoflagellates)
- Worked on labeling *Symbiodinium spp.* via transformations and live stains
- Compared physiology of *Symbiodinium* (using Pulse Amplitude Modulated Fluorometry)

### Research Intern

InterUniversity Institute

Summer 2005 to January 2006  
Eilat, Israel

- Conducted *Chromis Viridis* (fish) genetic analysis
- Engaged in field sampling of fish recruits, surveying of coral reefs (SCUBA).
- Extracted DNA and optimized PCR reactions for genomic DNA from fish

### Independent Research

UC Santa Barbara, Marine Science Institute

Winter and Spring 2003  
Santa Barbara, California

- Established alcohol as an assay of toxicity for *Pyrocystis*
- Established toxicity curve with an unknown Marine Inhibiting Factor on various organisms

### Biotech Intern

DevaTal Inc (Previously Devaron)

Summer, 2001  
New Jersey

- Assisted in the development and production of diagnosing reagents
- Performed plasmid extractions, transformations
- Induced protein expression, isolated induced proteins
- Prepared reagents, electrophoresis gels, standing stocks
- Processed data in Excel
- Modified protocols for available reagents

## Skills:

**Molecular/Microbiology:** PCR, RNA/DNA isolation, Viral (RNA/DNA) isolations, CsCl Gradients, RNA/DNA nonspecific and targeted amplification, Multiple Displacement Amplification (MDA), Whole Transcriptome Amplification(WTA), 454 library preparations, Gel electrophoresis, Optimizing protocols and kits, Design primers, Cloning, Bacterial/unicellular eukaryotic (algae) culturing, Western Blotting, ELISA, Fluorescence, Transmission and Scanning microscopy.

**Bioinformatics/Computer skills:** Univariate and multivariate statistical analysis of metagenomes, High throughput techniques (454 Pyrosequencing), 454 Sequence library analysis, Data mining (NCBI, PFAM, SEED), Gene annotations, Genome assembly, interaction networks.

Proficiency using the following programs/servers: CAP3, Cluster W, GENEIOUS, PRIMER 6, PRIMER 3, BLAST, METAVIR, CAMERA, CD HIT, GALAXY, MG RAST, QIIME, PICRUSt, Sigma Plot, Cytoscape, CoNet, Unix Command line (Bash), Excel, Power point, Photoshop and Illustrator.

**Field skills:** Plan and conduct field work in remote locations (including permit applications, field logistics, budgeting, experimental design, oversight of field assistants, SCUBA collections, and wetlab manipulations), AAUS Scuba certification (over 100 research dives), Rescue diver certification (CPR, First Aid, Oxygen administration), Lead and train field assistants, Collaboration and teamwork with local scientists, Creative problem solving and trouble shooting.

### **Grants/Awards:**

- Student Sustainability Initiative Travel Grant (\$500) (2012) to attend Environmental Virology Workshop in Oracle, Arizona (Biosphere 2)
- Graduate Student Travel Award \$1,000 (2012) to present in International Coral Reef Symposia in Cairns, Australia.
- NSF Graduate Research Fellowship \$120,000 (2008- 2012)
- NSF Gk-12 Science Made Sensible Fellowship \$80,000 (2007, 2008)
- NSF Graduate Fellowship Honorable Mention (2007)
- Summa Cum Laude (Highest Honors)- UC Santa Barbara (2005)

### **Professional associations/honors:**

- International Society for Microbial Ecology (ISME)
- American Association for the Advancement of Sciences (AAAS)
- International Society for Reef Studies (ISRS)
- Women in Science (WIS-Oregon State University)
- National Society of Collegiate Scholars
- Alpha Lambda Delta
- College of Creative Studies Honors
- Golden Key International Honour Society
- Deans Honors

### **Publications:**

**Soffer, N.,** Zaneveld J., Vega Thurber R. “Phage-bacteria network analysis and its implications for coral disease.” *Environmental Microbiology*. In Review.

**Soffer, N.,** Brandt M.E., Correa A.S., Smith, T.B., and Vega Thurber., R. 2013. “Potential role of viruses in white plague coral disease.” *ISME J.* doi:10.1038/ismej.2013.137

**Soffer, N.,** Gibbs, P.D.L, Baker, A.C. 2009. “Practical applications of contaminant- free *Symbiodinium* cultures grown on solid media.” *Proceedings of the 11<sup>th</sup> International Coral Reef Symposium, Ft. Lauderdale, Florida, 7-11 July 2008.*

### **Publications in preparation:**

**Soffer, N.,** Couch, C., Zaneveld J., Harvell., D., Vega Thurber, R. Viral and bacterial metagenomic and analysis of growth anomalies from *Porites Lobata* corals.

## **Presentations:**

- Soffer, N.,** Zaneveld, J., Brandt, M., Vega-Thurber, R. Bacteriophage and bacterial communities of *Montastraea annularis*, a reef building Caribbean coral. Oral presentation. 20th Evergreen International Phage Meeting. Olympia, WA. 2013
- Soffer, N.,** Brandt, M., Correa M.S.A., Smith, T., Vega Thurber R., Viruses as putative pathogens of white plague coral disease. Poster presentation. Environmental Virology Workshop. Biosphere 2 in Tucson, Arizona. 2013
- Soffer, N.,** Brandt, M., Vega-Thurber, R. Viruses as Putative White plague-like Pathogens. Invited talk. University of Virgin Island Center for Marine and Environmental Studies. St. Thomas, US Virgin Islands 2012
- Soffer, N.,** Brandt, M., Vega-Thurber,R. Viruses as Putative White plague Type II Pathogens. Oral presentation. 12<sup>th</sup> International Coral Reef Symposia. Cairns, Australia. 2012
- Soffer, N.,** Brandt, M., Smith, T.,Correa, AMS.,Vega-Thurber, R. Viruses as Putative White Plague Type II Pathogens. Oral presentation. 25<sup>th</sup> Annual Biology Graduate Student Symposium. Newport, OR. 2012
- Soffer, N.,** Yang, X., Narasimham, G., Vega Thurber R. Pursuing viral pathogens in white plague infected corals. Oral presentation. Oregon State University microbiology departmental colloquium. Corvallis, OR. 2011
- Soffer, N.,** Brandt, M., Smith, T.,Correa, AMS.,Vega-Thurber, R. Poster presentation “Viral Metagenomic Comparisons of White Plague Infected, Bleached, and Healthy *Montastraea annularis* Corals from the US Virgin Islands " American Society of Limnology and Oceanography Aquatic Sciences Meeting, San Juan PR. 2011
- Soffer, N.,** Vega Thurber R. Poster presentation. “Methodological development for determining novel viruses in the Caribbean coral *Montastraea cavernosa*.” Florida American Society for Microbiology 2010 annual meeting. Islamorada Fl, 2010
- Soffer N.,** Vega Thurber, R. Poster presentation. “Novel DNA viruses from Caribbean coral.” International Society Microbial Evolution, Seattle WA 2010
- Soffer, N.,** Gibbs, P.D.L., Schmale M.C., Baker, A.C. Poster presentation. “Practical applications of agar-plate grown *Symbiodinium*.” International Coral Reef Symposia, Fort Lauderdale Fl., 2008

## **Workshops Attended**

**Aquatic Virus Ecology On-Line Forum Development Workshop** sponsored by the Moore Foundation held in Lincoln, Nebraska, USA (September 24–25, 2013). Invited participant.

**Environmental Virology Workshop** held in Biosphere 2 in Tucson, Arizona (January 6-12, 2013). Accepted participant.

**Light and Photosynthesis on Coral reefs** workshop held in Puerto Morelos, Quintana Roo, Mexico (January 9-February 7). Accepted participant.

### **Work highlighted in popular press:**

“Viruses Associated With Coral Epidemic of 'White Plague'” *Science Daily*, Sept. 12, 2013.  
<http://www.sciencedaily.com/releases/2013/09/130912143938.htm>

“Virus may be causing deadly coral 'white plague' epidemic in Caribbean” *Live Science (Reported on NBC News Science)* Oct 15, 2013. [http://www.livescience.com/40419-coral-white-plague-viruses.html?utm\\_source=feedburner&utm\\_medium=feed&utm\\_campaign=Feed%3A+Livesciencecom+\(LiveScience.com+Science+Headline+Feed\)](http://www.livescience.com/40419-coral-white-plague-viruses.html?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+Livesciencecom+(LiveScience.com+Science+Headline+Feed))

### **Outreach/Teaching Experience:**

#### **Teaching Assistant**

Oregon State University, Department of Microbiology

Summer 2013  
Corvallis, Oregon

- Head TA of Intro to Microbiology Laboratory for non- majors (MB 230)  
Prepare and conduct lectures, coordinates other TAs for prepping and disassembly of lab supplies, teach microbiology techniques-over 40 students
- TA of Intro to Microbiology Laboratory for majors (MB303).  
Guide, oversee and grade 14 students during lab, prepare and disassemble lab with other TAs

#### **Education Chair**

Oregon State University Microbiology Graduate Association

2012-2013 academic year  
Corvallis, Oregon

- Present career opportunities to micro graduate students
- Plan Microbiology graduate students winter retreat

#### **Mentoring/training students in Vega Thurber laboratory**

Oregon State University, Microbiology Department

2011-2013  
Corvallis, Oregon

- Trained undergraduates in PCR, Bacterial extractions, sequence analysis, field work
- Mentored and trained a high schooler in bacterial extractions, conference poster preparation

#### **NSF Graduate Research Fellowship Resource Contact**

2012-present

- Available for recent and prospective NSF Fellows for advice on applying

#### **NSF Gk-12 (Science Made Sensible) Fellow**

University of Miami/ North Dade Middle School

June 2007-June 2009  
Opa Locka\*, Florida

- Spent 10 hours a week in low performing “F rated” FL middle school to increase science interest and standardized test (FCAT) scores
- Collaborated with Florida middle school science teachers to create science activities for 6th, 7th and 8th graders that

address FL teaching standards, increase FCAT scores and incorporate my coral reef research.

- Created and taught 6th, 7th and 8th graders science lectures
- Helped plan field trip with accompanying activities to local zoo for students

**Interviewed on National Geographic News Watch by Stuart Pimm**

April 2010

([http://newswatch.nationalgeographic.com/2010/04/30/biodiversity\\_stranger\\_than\\_avatar/](http://newswatch.nationalgeographic.com/2010/04/30/biodiversity_stranger_than_avatar/))

**BIOBLITZ Scientist Volunteer**

April, 2010

- Manned a “plankton booth” with microscopes/information for the public

Biscayne Bay, Florida

**“Grant Writing Workshop” invited speaker**

February, 2010

- Gave a talk on how to apply to an NSF graduate fellowship
- Served on a question and answer panel for graduate student grant writers

Miami, Florida