**John Everett Parkinson**

Curriculum Vitae

Oregon State University Phone: +1 (543) 737-5347

Department of Integrative Biology jeverettparkinson@gmail.com

3029 Cordley Hall, Corvallis, OR 97331 http://www.thelifeaquatic.net

**Education**

2009-2014 The Pennsylvania State University (PhD, Biology)

*Dissertation*: The role of intraspecific diversity in coral-algal symbiosis ecology and evolution.

*Committee*: Iliana B. Baums (advisor), Todd C. LaJeunesse (chair), Mary Alice Coffroth, James H. Marden, Andrew F. Read, Istvan Albert

2005-2009 The University of Miami, Rosenstiel School of Marine and Atmospheric Science

(BS, *summa cum laude*, Marine Science and Biology)

*Honors Thesis*: Effect of elevated temperature, irradiance, and symbiont exposure on the settlement success and early ontogeny of a coral-algal symbiosis: a case study of the brooding coral *Porites astreoides*

*Committee*: Andrew C. Baker (advisor), Peter W. Glynn (chair), Daniel DiResta

**Research and Academic Appointments**

2016-present Oregon State University (Postdoctoral Researcher)

Department of Integrative Biology (Weis Lab)

2015-2016 University of the Ryukyus (Postdoctoral Fellow)

Department of Biology, Chemistry, and Marine Science (Reimer Lab)

2014-2015 Pennsylvania State University (Postdoctoral Researcher)

Department of Biology (Baums Lab)

2009-2014 The Pennsylvania State University (Graduate Student / Researcher)

Department of Biology (Baums Lab)

2007-2009 University of Miami, Rosenstiel School of Marine and Atmospheric Science

(Undergraduate Student / Researcher)

Department of Marine Biology and Fisheries (Baker Lab)

2005-2007 University of Miami, Rosenstiel School of Marine and Atmospheric Science

(Undergraduate Student / Researcher)

Department of Marine Biology and Fisheries (McManus Lab)

**Peer-Reviewed Publications**

(12) Gupstra CGB, Coma R, Ribes M, Leydet KB, **Parkinson JE**, McDonald K, Catlla M, Voolstra CR, Hellberg ME, Coffroth MA (2017) Evidence for coral range expansion accompanied by reduced symbiont diversity. *Coral Reefs*

(11) Reimer JD, Herera M, Gatins R, Roberts MB, **Parkinson JE**, Berumen ML (2017) Latitudinal variation in the symbiotic dinoflagellate *Symbiodinium* of the common reef zoantharian *Palythoa tuberculosa* on the Saudi Arabian coast of the Red Sea. *Journal of Biogeography* doi:10.1111/jbi.12795

(10) Kavousi J, **Parkinson JE**, Nakamura T (2016) Combined ocean acidification and low temperature stressors cause coral mortality. *Coral Reefs* doi:10.1007/s00338-016-1459-3

(09) **Parkinson JE**, Yang SY, Kawamura I, Byron G, Todd P, Reimer J (2016) A citizen science approach to monitoring bleaching in the zoantharian *Palythoa tuberculosa*. *PeerJ* 4:e1815. doi:10.7717/peerj.1815

(08) **Parkinson JE**, Baumgarten S, Michell CT, Baums IB, LaJeunesse TC, Voolstra CR (2016) Gene expression variation resolves species and individual strains among coral-associated dinoflagellates within the genus *Symbiodinium*. *Genome Biology and Evolution* 8:665-680. doi:10.1093/gbe/evw019

**(**07) **Parkinson JE**, Banaszak AT, Altman NS, LaJeunesse TC, Baums IB (2015) Intraspecific diversity among partners drives functional variation in coral symbioses. *Scientific Reports* 5:15667 doi:10.1038/srep15667

(06) **Parkinson JE**, Coffroth MA, LaJeunesse TC (2015) New species of Clade B *Symbiodinium* (Dinophyceae) from the greater Caribbean belong to different functional guilds: *S. aenigmaticum* sp. nov., *S. antillogorgium* sp. nov., *S. endomadracis* sp. nov., and *S. pseudominutum* sp. nov. *Journal of Phycology*. 51:850-858. doi:10.1111/jpy.12340

(05) **Parkinson JE**, Baums IB. (2014) The extended phenotypes of marine symbioses: ecological and evolutionary consequences of intraspecific genetic diversity in coral-algal associations. *Frontiers in Microbiology* 5:445. doi:10.3389/fmicb.2014.00445

(04) LaJeunesse TC, Wham D, Pettay DT**, Parkinson JE**, Keshavmurthy S, Chen C (2014) Ecologically differentiated, thermally tolerant endosymbionts in the dinoflagellate genus *Symbiodinium* (Dinophyceae) are different species. *Phycologia* 53(4):305-319. doi:10.2216/13-186.1

(03) Cooper WT, Lirman D, Porter M, **Parkinson JE**, Herlan J, McManus JW. (2014) Assessing techniques to improve early post-settlement survivorship of corals for in situ restoration. *Bulletin of Marine Science* 90(2):651-664. doi:10.5343/bms.2013.1020

(02) Baums IB, Devlin-Durante MK, Polato NR, Xu D, Giri S, Altman NS, Ruiz D, **Parkinson JE**, Boulay J.N. (2013) Genotypic variation influences reproductive success and thermal stress tolerance in the reef building coral *Acropora palmata*. *Coral Reefs* 32(3):703-717. doi:10.1007/x00338-013-2012-6

1. LaJeunesse TC, **Parkinson JE**, Reimer JD (2012) A genetics-based description of *Symbiodinium minutum* sp. nov. and *S. psygmophilum* sp. nov. (Dinophyceae), two dinoflagellates symbiotic with Cnidaria. *Journal of Phycology* 48(6):1380-1391. doi:10.1111/j.1529-8817.2012.01217.x

**Contributions to Government Agencies**

(01) Hunt J, Sharp W (2014) Developing a comprehensive strategy for coral restoration for Florida. State Wildlife Final Report (Coral Traits Workshop Attendee)

**Fellowships**

2015-2016 Japan Society for the Promotion of Science Postdoctoral Fellowship

2009-2014 National Science Foundation Graduate Research Fellowship

2009-2010 Penn State University Fellowship

2005-2009 University of Miami Bowman Foster Ashe Scholarship

2006 University of Miami Rosenstiel School of Marine and Atmospheric Science Summer Fellowship

**Grants**

(04) $2,000: Phycological Society of America Grant-in-Aid of Research (2017) “Tracking symbiotic dinoflagellate coinfection dynamics in cnidarian hosts using dye tracers" Principal investigator.

(03) $10,000: Japan Society for the Promotion of Science Research Funds (2015-2016) “Functional consequences of ecological specialization in marine symbioses" Principal investigator.

(02) $138,816: NSF RAPID Grant (2015-2016) "Surviving climate change – the role of acclimatization in reef-building corals" [OCE1516763] Contributing author.

(01) $68,999: NOAA Coral Reef Conservation Grant Program (2014-2016) "Improving the conservation value of staghorn nurseries" [NA14NOS4820085] Lead author.

**Awards and Honors**

2017 Recognition: Among the most cited papers of 2015/2016 in the *Journal of Phycology*

2016 Tyge Christensen Prize from the International Phycological Society:

Best Paper Published in *Phycologia* in 2014

2015 Best Undergraduate Poster (Coauthor), 44th Annual Benthic Ecology Meeting

2012-2014 Various Travel Awards: Ecological Genomics Symposium Postdoc Travel Award, Ecological Genomics Symposium Student Travel Award, PSU Biology Department Travel Award (2x), PSU Institute of Molecular Evolutionary Genetics Travel Award (2x)

2010 Best Poster, Coral Reef Restoration Session, 39th Benthic Ecology Meeting

2009-2010 Penn State Braddock Award

2009 University of Miami Outstanding Marine Science Student Award

2008 Phi Beta Kappa Induction

2005 University of Miami Foote Fellow

**Science Writing**

(06) “The greatest frag swap on earth.” (2015) Reefs.com Magazine (Fall Edition)

<https://www.reefs.com/forum/mag.php?do=wp\_post&articleId=174>

(05) “*Symbiodinium”* (2012) Tree of Life Web Entry (alpha version)

<http://tolweb.org/Symbiodinium/126705>

(04) “*Symbiodinium”* (2012) Wikipedia Entry (alpha version)

<http://en.wikipedia.org/wiki/Symbiodinium>

(03) “Coral Spawning Blog” (2011) Baums Lab (Mexico Expedition)

<http://www.personal.psu.edu/jep295/blogs/coral\_spawning\_2011/blog/>

(02) “Alumni Sounding” (2009) Wave – Marine Science Magazine, U. of Miami

<http://www.rsmas.miami.edu/assets/pdfs/undergraduate/wave-200911.pdf>

(01) “Coral Spawning Blog” (2009) Baums Lab (Puerto Rico Expedition) <http://www.personal.psu.edu/jep295/blogs/puertorico2009/blog/>

**Press**

(08) "Frogfish turns itself white to blend in with bleached corals." (2016) Blog Post

<https://www.newscientist.com/article/2108979-frogfish-turns-itself-white-to-blend-in-with-bleached-corals/>

(07) "UCLA faculty voice: Ten environmental reasons to be thankful." (2015) Blog Post

<http://newsroom.ucla.edu/stories/ucla-faculty-voice:-ten-environmental-reasons-to-be-thankful>

(06) “Partners in crime: certain corals protect their symbiotic algae from climate change better than others.” (2015) Press Release

< http://science.psu.edu/news-and-events/2015-news/Baums10-2015>

(05) “Species differences found among algae that help corals fight climate change.” (2014) Press Release

<http://allenpress.com/node/1113>

(04) “How do you determine the age of coral, the 'trees of the ocean'?” (2014) Radio Interview

<http://www.newsworks.org/index.php/local/the-pulse/63360-how-do-you-determine-the-age-of-coral-the-trees-of-the-ocean>

(03) “DNA analysis aids in classifying single-celled algae.” (2012) Press Release

<http://news.psu.edu/story/146489/2012/09/19/research/dna-analysis-aids-classifying-single-celled-algae>

(02) “Penn State is home to 14 new NSF graduate researchers.” (2009) Article <http://live.psu.edu/story/41153>

(01) “Rosenstiel students come out on top.” (2009) Article <http://www.rsmas.miami.edu/pressreleases/20090618-nsf.html>

**Teaching Experience**

2017 Co-lecturer: BI 358: Symbioses and the Environment

2015-2016 Trained graduate students in the Reimer lab in molecular techniques related to *Symbiodinium* diversity and academic writing

2013 Biology Lab TA: BIOL 230W Cell Biology

2012 Biology Lab TA: BIOL 230W Cell Biology

2012 “Biodiversity and Conservation of the Ocean”

Lecture, BIOL 482 Coastal Biology

2011 “Paleozoic fossil beds of Central Pennsylvania”

Field Trip, BIOL 417 Invertebrate Zoology

2010 “Rocky Intertidal Communities”

Lecture, BIOL 482 Coastal Biology

**Outreach**

2017 High school senior thesis mentor to Lucie Meier (Riverdale High School ‘17)

2017 Oregon State University Outreach: (1) School of Arts and Communication event A Call to Life—Variations on a Theme of Extinction (2) OSU Biology Open House: Presented Weis lab projects incorporating posters and live animals.

2016 Undergraduate senior thesis committee member for Kathryn Hampton-Wonder (Oregon State Biology '16)

2016 Okinawa Prefectural Kyuyo High School: Provided feedback on student science presentations and posters.

2014 Penn State Graduate Research Exhibition: Judged various categories.

2014 Pennsylvania Junior Science and Humanities Symposium: Judged life sciences category of a state-wide high school science fair competition.

2013 Penn State Undergraduate Research Exhibition: Judged life sciences category.

2013 Pennsylvania Junior Science and Humanities Symposium: Judged life sciences category of a state-wide high school science fair competition.

2012-2013 Undergraduate senior thesis mentor to Shane Denecke (Penn State Biology ’13)

2012 Nittany Valley Charter School: Taught a two hour interactive class on coral reefs and climate change to twelve 3rd and 4th graders, incorporating traditional lecture, video, microscope work, and handling of coral skeletons.

2011-2012 High school senior thesis mentor to Thomas Cervone-Richards (Warwick Valley

High School ’12).

2009-2010 Undergraduate senior thesis mentor to Nadia Abidi (Penn State Biology ’10).

**Invited Talks**

(7) **Parkinson JE** (2017) Molecular handshakes: glycan-lectin interactions in coral-algal symbioses. Oral presentation for the Integrative Biology Department of Oregon State University in Corvallis, Oregon.

(6) **Parkinson JE**, Baums IB (2016) What genetics can tell us about how to conserve and restore threatened corals. Oral presentation for the NOAA Workshop to Advance the Science and Practice of Caribbean Coral Restoration in Fort Lauderdale, Florida.

(5) **Parkinson JE** (2015) Gene expression variation resolves species and individual strains among coral-associated dinoflagellates within the genus *Symbiodinium*. Oral presentation for the Centre of Marine Science of the University of Queensland in Brisbane, Australia.

(4) Reimer JD, **Parkinson JE** (2015) *Symbiodinium* species diversity: how deep does the rabbit hole go? Oral presentation at the mini symposium Small Meets Large: Connecting Microfluidics with Marine Ecology hosted by the Okinawa Institute of Science and Technology in Okinawa, Japan.

(3) **Parkinson JE** (2014) Partner genotype interactions in corals: a focus for restoration? Oral presentation at the Coral Traits Workshop hosted by the Florida Fish and Wildlife Commission in Miami, FL.

(2) **Parkinson JE** (2014) Coral nursery research at Penn State. Oral presentation as part of the Ocean Talks Seminar Series by the Geosciences Department at Penn State University in University Park, PA.

(1) **Parkinson JE** (2012) Hierarchical molecular classification of *Astrangia*-associated *Symbiodinium*. Oral presentation at the *Astrangia* Workshop hosted by the Ocean Genome Legacy, Ipswitch, MA. [http://www.oglf.org/MeetingsWorkshops.htm]

**Peer Reviewer for Refereed Journals**

2011 Review Count: 01

2012 Review Count: 01

2013 Review Count: 01

2014 Review Count: 06

2015 Review Count: 11

2016 Review Count: 18

2017 Review Count: 11

Comparative Physiology and Biochemistry

Coral Reefs

Evolution

FEMS Microbiology Ecology

Frontiers in Marine Science

Frontiers in Microbiology

Heredity

ISME Journal

Journal of Heredity

Hydrobiologia

Marine Ecology

Marine Ecology – Progress Series

Marine Genomics

Microbial Ecology

Molecular Ecology

Nature Ecology and Evolution

Nature Scientific Reports

Ocean Science Journal

PeerJ

PLOS One

Proceedings of the Royal Society B

Royal Society Open Science

The Science of Nature (Naturwissenschaften)

Symbiosis

Trends in Ecology and Evolution

**Peer Reviewer for Government Agencies**

National Science Foundation: Biological Oceanography and Ecosystems

National Oceanic and Atmospheric Administration: University of Hawai‘i Sea Grant College Program

**Conference Organizer**

(1)Co-chair: 13th International Coral Reef Symposium (2016)

Session 5: Acclimatization and Adaptation in Reef Organisms

**Conference Presentations**

(17) **Parkinson JE**, Tivey TR, Weis VM (2017) Tracking symbiotic dinoflagellate coinfection dynamics in cnidarian hosts using dye tracers. Oral presentation at the 2017 Phycological Society of America Annual Meeting in Monterey, California.

(16) Mandelare PE, Adpressa DA, Tivey T, **Parkinson JE**, Weis V, Loesgen S. (2017) Chemistry of symbiosis: exploration of glycan-dependent recognition between cnidarians and algae. Poster presentation at the 26th Volcano Conference in Bioorganic Chemistry in Pack Forest, Washington.

(15) **Parkinson JE**, Schopmeyer S, Nedimyer K, Bartels E, Lustic C, Lirman D, LaJeunesse TC, Baums IB (2016) Fine-scale transcriptional responses to climate change in the endangered Caribbean Staghorn coral *Acropora cervicornis*. Oral presentation at the 13th International Coral Reef Symposium in Honolulu, Hawaii.

(14) Reimer JD, Fujiwara Y, **Parkinson JE** (2016) Diversity of *Symbiodinium* spp. in the zoantharian *Zoanthus sansibaricus* across vertical gradients in the Western Pacific. Oral presentation at the 13th International Coral Reef Symposium in Honolulu, Hawaii.

(13) LaJeunesse TC, **Parkinson JE**, Reimer JD, Voolstra C (2016) A systematic revision of *Symbiodinium*: "Clades" are genera. Oral presentation at the 13th International Coral Reef Symposium in Honolulu, Hawaii.

(12) Reimer JD, Fujiwara Y, **Parkinson JE** (2016) Diversity of *Symbiodinium* spp. in the zoantharian *Zoanthus sansibaricus* across vertical gradients in the Western Pacific. Oral presentation at the 23rd Pacific Science Conference in Taipei, Taiwan.

(11) **Parkinson JE**, Fujiwara Y, Reimer JD (2015) Tracking zoantharian symbiont community shifts under changing light regimes. Oral presentation at the 2015 East China Sea International Workshop, Jeju, South Korea.

(10) McDonald K, Grupstra C, Posbic Leydet K, **Parkinson JE**, Ribes M, Coma R, Hellberg M, Baums I, Voolstra C, Coffroth MA (2015) Development of microsatellite loci for *Symbiodinium* *psygmophilum* (*Symbiodinium* ITS-type B2). Poster presentation at the 44th Annual Benthic Ecology Meeting in Quebec City, Canada. Winner: Best Undergraduate Poster (K McDonald)

(09) **Parkinson JE**, Baumgarten S, Michell C, Baums IB, LaJeunesse TC, Voolstra CR (2014) Transcription of coral-associated dinoflagellates (genus *Symbiodinium*) varies extensively among individuals and species within Clade B. Poster presentation at the 12th Annual Ecological Genomics Symposium in Kansas City, Missouri.

(08) **Parkinson JE**, Coffroth MA, LaJeunesse TC, Baums IB (2013) Moving toward a systematic revision of the genus *Symbiodinium*, the intracellular symbiont of corals. Oral presentation at the Evolution 2013 meeting in Snowbird, UT.

(07) **Parkinson JE**, Banaszak AT, LaJeunesse TC, Baums IB (2012) The molecular basis of host x symbiont genotype interactions in corals. Poster presentation at the 10th Annual Ecological Genomics Symposium in Kansas City, Missouri.

(06) **Parkinson JE**, Banaszak AT, LaJeunesse TC, Baums IB (2012) Host-symbiont interactions at the sub-clade level influence holobiont thermal resistance. Oral presentation at the 12th International Coral Reef Symposium in Cairns, Australia.

(05) **Parkinson JE**, LaJeunesse TC, Reimer JD (2012) Hierarchical molecular classification of coral-associated dinoflagellates: an effort toward taxonomic stability in the genus *Symbiodinium*. Oral presentation at the 41st Benthic Ecology Meeting in Norfolk, Virginia.

(04) Baums IB, LaJeunesse TC, **Parkinson JE** (2010) High clonality of host and symbionts characterizes Florida *Acropora palmata* populations. Poster presented at the Linking Science to Management: a Conference and Workshop of the Florida Keys Marine Ecosystem, Duck Key, FL.

(03) **Parkinson JE**, Abidi NA, Baums IB (2010) Associations are flexible during the early ontogeny of *Acroporid* coral-algal symbioses. Poster presented at the 39th Benthic Ecology Meeting in Wilmington, NC. Winner: Best Poster in the Coral Reef Restoration Session.

(02) **Parkinson JE**, Baker AC, Baums IB, Cooper WT, Jones P (2009) Effect of elevated temperature on the settlement success and early ontogeny of a coral algal symbiosis: a case study in the brooding coral *Porites astreoides*. [Updated] Poster presented at the Cooperation Conference, Ithaca, NY.

(01) Baker AC, Jones P, **Parkinson JE**, Cooper WT (2008) Effect of elevated temperature on the settlement success and early ontogeny of a coral algal symbiosis: a case study in the brooding coral *Porites astreoides*. Poster presented at the 11th International Coral Reef Symposium, Fort Lauderdale, FL (2008), and the University of Miami Research and Creativity Forum, Coral Gables, Fl (2009).

**Technical Skills**

American Academy of Underwater Sciences authorized scientific research SCUBA diver (>250 science dives); SSI Advanced certified; IANTD Nitrox certified

Field ecology experience, including research planning, collection permitting, and logistical coordination

*Symbiodinium* and *(Ex)Aiptasia* culturing techniques

Molecular biology laboratory techniques (DNA+RNA extraction, bacterial cloning and sequencing, PCR and real-time PCR, denaturing gradient gel electrophoresis, Western blots, ELISA)

Microarray and next generation sequencing data analysis (e.g. EdgeR, DESeq2, HTqPCR)

Light / Confocal microscopy, PAM fluorometry

Computation: proficient with R, GIS, Python, UNIX, SPSS, bioinformatics pipelines, population genetics software (GenoDive, Structure, etc.), phylogenetics software (PAUP\*, Mr.Bayes, etc.), sequence alignment software (Geneious, CodonCode Aligner, etc.), general manipulation of big data files, and cluster computing

Other software: proficient with Adobe Illustrator & Photoshop, Microsoft Office, EndNote

Web design and computer maintenance

Decent Spanish

**Societies**

2015-present American Phycological Society

2010-present American Association for the Advancement of Science

2008-present Phi Beta Kappa

2010-2013 Penn State Biology Department Graduate Student Association (Webmaster/Historian/Secretary 2010-2013)

**Online Profiles**

Twitter: @parkinsonje

<http://www.twitter.com/parkinsonje

ResearchGate: John Parkinson <https://www.researchgate.net/profile/John\_Parkinson7?ev=hdr\_xprf>

Google Scholar: John Parkinson <http://scholar.google.com/citations?user=RXpMq54AAAAJ&hl=en&oi=sra>

Personal Website: thelifeaquatic.net

<http://www.thelifeaquatic.net>