William Joseph Jones

Curriculum Vitae- January 4, 2016

Office Address

University of South Carolina

Department of Environmental Health Sciences

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Professional Experience

2014-	Faculty Principal, Green Quad Learning Center, USC
2013-2014	Director, Genomic Services, Selah Genomics (formerly EnGenCore)
2013-	Associate Faculty, Environment and Sustainability Program, USC
2011-	Research Associate Professor, Department of Environmental Health Sciences, USC
2009-	Associate Faculty, Marine Science Program, USC
2007-2013	Director, Environmental Genomics Core (EnGenCore) facility, USC
2010-2012	Lab director for Dr. Stephen Kresovich, USC
2003- 2007	Research Associate, Monterey Bay Aquarium Research Institute
2002	Postdoctoral Researcher, Universitat Konstanz, Germany.
1997-2001	Teaching Assistant, Biology Department, UCSC
1997	Research Assistant, Marine Science Program, USC
1995-1997	Teaching Assistant, Marine Science Program, USC
1995	Visiting Research Scientist, Netherland Institute for Sea Research
1994	Summer Fellow, Howard Hughes Scholar, USC

Education

PDF Universitat Konstanz (2002)

Ph. D. University of California at Santa Cruz (2001), Biology

M. Sc. University of South Carolina (1997), Marine Science

B. Sc. University of South Carolina (1995, *cum laude*), Marine Science

Additional education:

2006 Molecular phylogenetics course, Summer Institute in Statistical Genetics, University of Washington.
2004 "Bayesian modeling, inference, and prediction", UC Berkley.
2001 "Molecular and genetic tools for the analysis of medaka and zebrafish development", EMBO, Heidelberg, Germany
1999 " Challenges in Conservation Biology", UC summer symposium in conservation biology, White Mountain Research Station.

Honors and Awards

2015	Sustainability Award, ESP Program, USC
2014	John N. Gardner Inspirational Faculty Award
2000	Friends of Long Marine Lab Award, UCSC
1999-2001	Genetic Resource Conservation Program Award, UC Davis
2000	David Gaines Memorial Award, UCSC
1999	Earl and Ethyl Myers Trust Fund Award, UCSC
1999	Raney Award, American Society of Ichthyologists and Herpetologists
1999-2000	Theodore Roosevelt Award, American Museum of Natural History
1996-1997	Lerner Gray Award, American Museum of Natural History

Professional Memberships

American Society of Microbiologists
Society for the Study of Evolution
Society of Conservation Biologists
American Fisheries Society
Society for Molecular Biology and Evolution

Computer skills

Statistical analysis: JMP, SAS, Principle Component Analysis, R

UNIX / OS X programming language: compilation of open source code on Mac OSX using GCC4

Computer maintenance: 9 node cluster of OSX macs for phylogenetic analysis (including MPI programs such as mrbayes), 64 node Linux/Ubuntu cluster for data processing/assembly

Genomics/Assembly: thorough knowledge of genome assembly software (Consed, gsAssembler/Newbler, gsMapper, clview) and third-party (perl and python) scripts for analysis/processing of next-generation (Roche/454, Illumina, Pacific Biosciences) data. Also blast (and associated variants) and QIIME

Probe design and array printing: sandwich hybridization assay (SHA) quality control and testing (SA-biotin and DIG based detection)

Cloud based computing (AWS, DIAG, high-performance computing cluster (USC, planck))

Management and archival of large files (Gb to Tb)

Publications (*h* index=20, January 4, 2016)

Genetics of rare populations

1. **Jones, W. J.,** and J. M. Quattro. 1999. Phylogenetic affinities of pygmy sunfishes (*Elassoma*) inferred from mitochondrial DNA sequences. Copeia:470-474.
2. Quattro, J. M., **W. J. Jones**, J. M. Grady, and F. C. Rohde. 2001. Gene-gene concordance and the phylogenetic relationships among rare and widespread pygmy sunfishes (genus *Elassoma*). Molecular Phylogenetics and Evolution 18:217-226.
3. Quattro, J. M., **W. J. Jones**, and F. C. Rohde. 2001. Evolutionarily significant units of rare pygmy sunfishes (genus *Elassoma*). Copeia:514-520.
4. **Jones, W. J.,** B. D. Quelvog, and G. Bernardi. 2002. Morphological and genetic analysis of the Red Hills roach (Cyprinidae : *Lavinia symmetricus*). Conservation Genetics 3:261-276.
5. Aguilar, A., and **W. Jones**. 2009. Nuclear and mitochondrial diversification in two native California minnows: insights into taxonomic identity and regional phylogeography. Molecular Phylogenetics and Evolution 51:373-381.

Genetic connectivity

1. **Jones, W. J.,** and J. M. Quattro. 1999. Genetic structure of summer flounder

(*Paralichthys dentatus*) populations north and south of Cape Hatteras. Marine Biology 133:129-135.

2. Quattro, J. M., and **W. J. Jones**. 1999. Amplification primers that target locus-specific introns in actinopterygian fishes. Copeia: 191-196.
3. Quattro, J., **W. Jones**, and K. Oswald. 2001. PCR primers for an Aldolase-B intron in Acanthopterygian fishes. BMC Evolutionary Biology 1:9.
4. Ely, B., D. S. Stoner, J. R. A. Bremer, J. M. Dean, P. Addis, A. Cau, E. J. Thelen, **W. J. Jones**, D. E. Black, L. Smith, K. Scott, I. Naseri, and J. M. Quattro. 2002. Analyses of nuclear ldhA gene and mtDNA control region sequences of Atlantic northern bluefin tuna populations. Marine Biotechnology 4:583-588.
5. Johnson, S. B., C. R. Young, **W. J. Jones**, A. Waren, and R. C. Vrijenhoek. 2006. Migration, isolation, and speciation of hydrothermal vent limpets (Gastropoda ; Lepetodrilidae) across the Blanco Transform Fault. Biological Bulletin 210:140-157.
6. **Jones, W. J.,** and R. C. Vrijenhoek. 2006. Evolutionary relationships within the "*Bathymodiolus*" *childressi* group. Cahiers De Biologie Marine 47:403-407.
7. **Jones, W. J**., Y. J. Won, P. A. Y. Maas, P. J. Smith, R. A. Lutz, and R. C. Vrijenhoek. 2006. Evolution of habitat use by deep-sea mussels. Marine Biology 148:841-851.
8. **Jones, W**., and E. Macpherson. 2007. Molecular phylogeny of the East Pacific Rise squat lobsters of the genus *Munidopsis* (Decapoda, Galatheidae) with the description of seven new species. Journal of Crustacean Biology 27:477-501.
9. Clague, G., **W. Jones**, J. Paduan, D. Clague, and R. Vrijenhoek. 2011. Distribution and connectivity of *Acesta* clams (Limidae) from the northeastern Pacific. Marine Ecology 1-13.

Natural History

1. Macpherson, E., **W. Jones**, and M. Segonzac. 2005. A new squat lobster family of Galatheoidea (Crustacea, Decapoda, Anomura) from the hydrothermal vents of the Pacific-Antarctic Ridge. . Zoosystema 27:1-15.
2. Braby, C., G. Rouse, S. Johnson, **W. Jones**, and R. Vrijenhoek. 2007. Bathymetric and temporal variation among *Osedax* boneworms and associated megafuana on whale-falls in Monterey Bay, California. Deep-Sea Research Part I 54:1773-1791.
3. Moller, P. R., and **W. J. Jones**. 2007. *Eptatretus strickrotti* n. sp (Myxinidae): First hagfish captured from a hydrothermal vent. Biological Bulletin 212:55-66.
4. **Jones, W**., S. Johnson, G. Rouse, and R. Vrijenhoek. 2008. Marine worms (genus *Osedax*) colonize cow bones. Proceedings of the Royal Society B 275:387-391.
5. Rouse, G., K. Worsaae, S. Johnson, **W. Jones**, and R. Vrijenhoek. 2008. Acquisition of dwarf male "harems" by recently settled females of *Osedax roseus* n. sp. (Siboglinidae; Annelida). Biological Bulletin 214:67-82.
6. Holland, N., J. Ellena, **W. J. Jones**, H. Ruhl, and K. Smith. 2009. *Tergivelum baldwini* gen. n., sp. n., an epibenthic acorn worm (Hemichordata:

Enteropneusta) living in the deep sea. Zoosystema 31:333-346.

7. Newmann, W., and **W. Jones**. 2011. Two Northeast Pacific bathyal barnacle populations (Cirripedia, Scalpellomorpha & Balanomorpha) from seamounts of the Juan de Fuca Ridge; “insular” endemics stemming from Tethys, or from subsequent dispersal from the Western Pacific center of distribution? Zootaxa 2789: 49-68.
8. Thurber, A., **W. Jones**, and K. Schnabel. 2014. Dancing for food in the deep sea: bacterial farming by a new species of Yeti crab. PLoS One 6(11):e26243. doi: 10.1371/journal.pone.0026243

Microbial Ecology

1. Vrijenhoek, R., M. Duhaime, and **W. Jones**. 2007. Subtype variation among endosymbionts of vestimentiferan tubeworms (Polychaeta: Siboglinidae). Biological Bulletin 212:180-184.
2. Goffredi, S., **W. Jones**, H. Erhlich, and R. Vrijenhoek. 2008. Epibiotic bacteria associated with the recently discovered Yeti crab, *Kiwa hirsuta*. Environmental Microbiology 10:2623-2634.
3. Won, Y.-J., **W. Jones**, and R. Vrijenhoek. 2008. Absence of cospeciation between deep-sea mytilids and their thiotrophic endosymbionts. Journal of Shellfish Research 27:129-138.
4. Hamp, T., **W. Jones**, and A. Fodor. 2009. Effects of experimental choices and analysis noise on surveys of the "rare biosphere". Applied and Environmental Microbiology 75:3263-3270.
5. Turnbaugh, P., M. Hamady, T. Yatsunenko, B. Cantarel, A. Duncan, R. Ley, M. Sogin, **W. Jones**, B. Roe, J. Affourtit, B. Henrissat, A. Heath, R. Knight, and J. Gordon. 2009. A core gut microbiome in obese and lean twins. Nature 457:480-484.
6. **Jones, W**. 2010. High-throughput sequencing and metagenomics. Estuaries and Coasts 33:944-952.
7. Goffredi S., A. Gregory, **W. Jones**, N. Morella, and R. Sakamoto. 2014. Ontogenetic variation in epibiont community structure in the deep-sea yeti crab, *Kiwa puravida*: convergence among crustaceans. Molecular Ecology 23(6): 1457-72.

Technology development

1. Goffredi, S. K., **W. J. Jones**, C. A. Scholin, R. Marin, and R. C. Vrijenhoek. 2006. Molecular detection of marine invertebrate larvae. Marine Biotechnology 8:149-160.
2. Scholin, C., S. Jensen, B. Roman, E. Massion, R. Marin, III, C. Preston, D. Greenfield, **W. Jones**, and K. Wheeler. 2006. The Environmental Sample Processor (ESP)- An Autonomous Robotic Device for Detecting Microorganisms Remotely using Molecular Probe Technology. OCEANS 2006:1-4.
3. Roman, B., C. Scholin, S. Jensen, E. Massion, R. Marin, III, C. Preston, D.

Greenfield, **W. Jones**, and K. Wheeler. 2007. Controlling a robotic marine environmental sampler with the Ruby scripting language. Journal of the Association for Laboratory Automation 12:56-61.

4. **Jones, W**., C. Preston, R. Marin, III, C. Scholin, and R. Vrijenhoek. 2008. A robotic molecular method for in situ detection of marine invertebrate larvae. Molecular Ecology Resources 8:540-550.
5. Scholin, C., G. Douchette, S. Jensen, B. Roman, P. D, R. Marin, III, C. Preston, **W. Jones**, J. Feldman, C. Everlove, A. Harris, N. Alvarado, Massion, E, J. Birch, Greenfield, D, K. Wheeler, R. C. Vrijenhoek, C. Mikulski, and K. Jones. 2009. Remote detection of marine microbes, small invertebrtaes, harmful algae and biotoxins using the Environmental Sample Processor (ESP). Oceanography 22:158-167.
6. Smith, K., L. Rhodes, J. Adamson, J. Tyrrell, D. Mount, and **W. Jones**. 2011. Sandwich hybridisation assay, targeting the ribosomal RNA internal transcribed spacer region, for rapid on site detection of the Northern Pacific seastar, *Asterias amurensis*. New Zealand Journal Marine Freshwater Research 45: 1, 145-152.
7. Mortensen RA, SA Arnott, **WJ Jones**, DI Greenfield, and D. MacLatchy. 2015. Development of sandwich hybridization assay for the identification and quantification of red drum (*Scianops ocellatus*) eggs: a novel tool for fishery research and management. CJFAS 72:1-11.

Theses and Reports

2001 Ph.D. Ecology and Evolutionary Biology, University of California, Santa Cruz. Dissertation: DNA sequence divergence and speciation in two California minnows (Cyprinidae: *Lavinia exilicauda* and *L.* (=*Hesperoleucus*) *symmetricus*. Advisor: Dr. Giacomo Bernardi.

1997 M.S. Marine Science (Biology), University of South Carolina. Thesis: Genetic structure of summer flounder (*Paralichthys dentatus*) populations north and south of Cape Hatteras. Advisor: Dr. Joseph Quattro.

<u>Grant support / Contracts</u>

2015 CTE Grant

2015 SeaGrant with D. Greenfield

2014 Seagrant with D. Greenfield

2010 Department of Health and Environmental Control, Bureau of Water, $99k

2009 USDA-Beltsville $45k

2009 Savannah River National Laboratory $35k

2008-2011 $399k of revenue brought to the USC Research Foundation via the Environmental Genomics Core facility (40% of this allocated to operational expenses)

2001 Dissertation Improvement Grant, National Science Foundation $10k

Editorial Service

Molecular Phylogenetics and Evolution
Copeia
Journal of Molecular Evolution
Marine Biology
Molecular Ecology
Conservation Genetics
Biological Bulletin
Journal of Plankton Research

Symposia, Seminars, and Presentations

Invited

University of South Carolina, Marine Science Program seminar series, 4/2006
University of South Carolina, Department of Biological Sciences seminar series, 10/2008
California State University, Monterey Bay, 11/2006
Freedom Rotary Club, 11/2006
SCRA/SCLaunch CoffeeTalk on genomics, 5/2009
Lunch and Learn, USC Media, 2/2011

Scientific

Jones WJ and Quattro JM. Population genetic structure of summer flounder (*Paralichthys dentatus*): Are spawning populations distinct in the Western Atlantic? Benthic Ecology Meeting 1996.

Jones WJ and Quattro JM. Phylogenetic affinities of pygmy sunfishes (genus *Elassoma*) inferred from sequence analysis of mitochondrial DNA. American Society of Ichthyologists and Herpetologists 1997.

Jones WJ. Phylogenetic relationships and evolutionary significant units of California roach. Bay Area Conservation Biology Symposium 1999.

Jones WJ. Speciation in two California minnows. California Population and Evolutionary Genetic Meeting 1999.

Jones WJ and Bernardi G. Defining evolutionary significant units of California roach (*Hesperoleucus symmetricus*). Bay Area Conservation Biology Symposium 2000

Jones WJ. Ecological speciation in freshwater minnows (*Lavinia*). California Population and Evolutionary Genetic Meeting 2000.

Jones WJ, Quelvog B, and Bernardi G. Morphological and genetic analysis of endangered Red Hills roach populations (Cyprinidae: *Lavinia symmetricus*). Bay Area Conservation Biology Symposium 2001.

Tunnicliffe V, Juniper SK, Limen H, Jones WJ, Vrijenhoek R, Webber R, and Eerkes-Medrano. Shrimp populations on Northwest Rota, an active volcano of the Mariana Volcanic Arc. American Geophysical Union 2004.

Jones WJ, Duhaime M, and Vrijenhoek RC. Phylogenetics of Vestimentiferan symbionts of the Guaymas Basin using 16S rRNA and RuBisCo. Society for the Study of Evolution 2004, Fort Collins, CO.

Jones WJ and Vrijenhoek RC. Population genetics and phylogenetic relationships of Gulf of California squat lobsters (Galatheidae: *Munidopsis*). Gulf of California conference 2004, Tucson, AZ.

C. Preston, R. Marin III, W Jones, J. Ryan, S. Jenson, J. Feldman, E. Massion, B. Roman, D. Cline, E. DeLong, and C. Scholin. Autonomous, Near Real-time Detection of Marine Bacterioplankton in Monterey Bay using the Environmental Sample Processor (ESP). American Society of Limnology and Oceanography 2005, Honolulu, HI.

Jones WJ, Won Y-J, Maas P, Lutz R, and Vrijenhoek RC. Evolutionary of habitat use in deep-sea mussels. Third International Symposium on Hydrothermal Vent and Seep Biology, 2005, La Jolla, CA.

Jones WJ, Johnson S, and Vrijenhoek RC. Gene flow and genetic diversity of *Bathymodiolus brevior* mussels from the Lau and North Fiji basins. RIDGE planning meeting 2005, Vancouver BC.

Jones WJ and Vrijenhoek RC. Phylogenetics of deep-sea *Munidopsis* squat lobsters: comparative gene flow in 3 widespread species. International Crustacean Conference 2005, Glasgow.

Jones WJ, Tyler P, Clague D, and Vrijenhoek RC. Population genetics and ecology of seamount clams (Limidae: *Acesta*) in the northeastern Pacific Ocean. Seamount Biogeoscience Network 2006, La Jolla, CA.

Jones WJ, Preston C, Marin R III, Scholin C, and Vrijenhoek RC. Marine larvae detection. Larval Biology 2006, Coos Bay, OR.

Jones WJ, Preston C, Greenfield D, Roman B, Jensen S, Massion G, Marin R III, Scholin C, and Vrijenhoek RC. Use of sandwich hybridization and the environmental sample processor (ESP) for detection of marine larvae: high-throughput lab analysis and in situ detection. American Society of Limnologists and Oceanography 2007, Sante Fe, NM.

Fodor, A., T. Hamp, and W. Jones. Targeting the V1-V2 region of the 16S rRNA gene yields improved measures of microbial community composition in a pyrosequencing survey of a wastewater treatment plant. Metagenomics 2008 La Jolla, CA.

Management

directed and supervised six technicians as director of the Environmental Genomics Core facility at the University of South Carolina, oversight of daily maintenance and operation

of lab equipment, maintenance of a LIMS and Linux-based bioinformatics computer cluster, training of laboratory technicians and faculty where appropriate, consulting with users about proper sample preparation and data interpretation (over 200 clients, mostly faculty from outside of South Carolina), managing the facility budget and cost recovery, and developing method protocols and QA/QC documentation for projects.

Teaching Experience

2012-	"Environmental Pollution and Health", major ENHS course (45-100 students), University of South Carolina
2012	"Oceans and Man", non-major Marine Science course (205 students), University of South Carolina
2003-2004	Mentor, summer interns (2), Monterey Bay Aquarium Research Institute.
2002	Mentor, undergraduate students for honors course (2), Universitat Konstanz.
1997-2001	Teaching Assistant & Laboratory Instructor, Animal and Plant Physiology, Invertebrate Zoology, Ichthyology, Biochemistry, Cell Biology, Ecology and Evolution, Molecular Evolution, Evolution, University of California, Santa Cruz.
1997-2001	Mentor, ACCESS students (4), UC Santa Cruz.
1993-1996	Mentor, undergraduate students for honors course (4), University of South Carolina.
1995-1997	Teaching Assistant & Laboratory Instructor, Ichthyology, Biology of Marine Organisms, University of South Carolina.

Guest lectures at USC

ANAT 741(Spring 2009) Dr. Bob Price, School of Medicine

BIOL 302 Honors (Fall 2009, 2010) Dr. Sean Place, Department of Biological Sciences

BIOL 450 (Fall 2008) Dr. Bob Feller, Marine Science Program

ENHS 793 (Fall 2009) Dr. Tara Sabo-Atwood, Environmental Health Science

MSCI 210 (Fall 2011, 2013) Dr. Seth John, Marine Science Program

MSCI 450 (Fall 2011) Dr. Tammi Richardson, Marine Science Program

MSCI 575 (Fall 2011) Dr. Jay Pinckney, Marine Science Program

Media Outreach

Public outreach presenter, MBARI Open Houses, 2003-2006 (organizer 2006)

Mentor, Lagunitas Middle School (5th-6th grades) via Camp SEA Lab, 2004-2006

"Carolina Minute" radio program on National Public Radio: Topics of interviews (total of 5) included obesity and the human microbiome, microbiome, DNA sequencing technology, genetics of Alzheimers, and genetics of cancer

Doko Farm: USC Times, Carolinian magazine

"Yeti" crab: numerous media including BBC, NPR, National Geographic, San Francisco Chronicle, New York Times, Discovery Magazine

Service Activities at USC

Ocean Science Fair 2009, Judge

FYRE Discussion Leader, 2011, "No Impact Man"

U101 Faculty Committee for Faculty Relationships (2015)

ASPH Undergraduate Director for ENHS (2015-present)

Provost Committee on Undergraduate Education (2015-present)

Miscellaneous

American Livestock Breed Conservancy member

Co-owner of Doko Farm, Blythewood SC

Slow Food Columbia member

Beekeeper

Professional References

Dr. Claudia Benitez-Nelson, Marine Science Program, University of South Carolina, Columbia SC, 803-777-0018, cbnelson@geol.sc.edu

Dr. Dianne Greenfield, University of South Carolina, Belle Baruch Institute for Marine & Coastal Sciences, Charleston SC, 843-725-4823, dgreenfield@belle.baruch.sc.edu

Dr. Lukasz Lebioda, Department of Biochemistry, University of South Carolina, Columbia SC, 803-777-2140, lebioda@mailbox.sc.edu