CURRICULUM VITAE

Stephen J. Giovannoni

Department of Microbiology
Oregon State University
Corvallis, OR 97331-3804 U.S.A.

Telephone: (541) 737-1835
Fax: (541) 737-0496
E-mail: steve.giovannoni@oregonstate.edu
Web Site: http://microbiology.science.oregonstate.edu/dr-stephen-giovannoni

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Education:

- University of Oregon; Ph.D. in Biology 1984
- Boston University; M.A. in Biology 1978
- University of California, San Diego; B.A. in Biology 1974

Research Interests:

- Marine Microbiology
- Microbial Genomics
- Functional Genomics
- Carbon Cycle

Professional Experience:

- Distinguished Professor, Oregon State University 2012-present
- Director, Molecular and Cellular Biology Program, Oregon State University, Corvallis. 2000-2004
- Professor, Department of Microbiology, Oregon State University, Corvallis. 1999-present
- Associate Professor, Department of Microbiology, Oregon State University, Corvallis. 1993-1999
- Assistant Professor, Department of Microbiology, Oregon State University, Corvallis. 1988-1993
- NSF Postdoctoral Research Fellow with Norman Pace, Indiana University, Bloomington. 1984-1988
- Instructor, Department of Biology, University of Oregon, Eugene. 1984
- Graduate Research Assistant with Richard Castenholz, Department of Biology, University of Oregon, Eugene. 1979-1984
- Research technician with Edward Leadbetter, Biological Sciences Department, University of Connecticut. 1978-1979
- Graduate Teaching Fellow with Lynn Margulis, Department of Biology, Boston University, Boston. 1975-1978
- Research technician with George Feher, Department of Physics, University of California, San Diego. 1974-1975

Adjunct Faculty Status:

- Bermuda Institute of Ocean Science (BIOS)
- Monterey Bay Aquarium Research Institute (MBARI)

Honors and Awards:

- Jim Tiedje Award, for outstanding lifetime contribution to microbial ecology, International Society for Microbial Ecology 2012
- J. Roger Porter Award for contributions to microbial culture collections, American Society for Microbiology 2012
- Gilfillan Award, Distinguished Scholarship in Science, College of Science, Oregon State University 2011

- Proctor and Gamble Award in Environmental Microbiology
  American Society for Microbiology 2011
- Pernot Endowed Professor, OSU Department of Microbiology 2005-2010
- Milton Harris Award for Exceptional Achievement in Microbiology
  College of Science, Oregon State University 2003
- Fellow, American Academy of Microbiology 1997
- Sugihara Young Faculty Research Award,
  College of Science, Oregon State University 1994
- Emerging Scholar Award, Phi Kappa Phi 1993
- Morgenroth Award for Exceptional Achievement as a Graduate Student
  University of Oregon 1984

Current Teaching:

- *Microbial Genomics, Biogeochemistry and Diversity* (MB420/520; 3 lecture hours, yearly)
- *Microbial Bioinformatics and Genome Evolution* (MB 668; 4 lecture hours), yearly
- Co-instructor *Microbial Oceanography: The Biogeochemistry, Ecology and Genomics of Oceanic Microbial Ecosystems*, http://www.bios.edu/education/microb_ocean.html, The Bermuda Institute of Ocean Science, July 2006-2013

Training Activity:

- Seventeen former graduate students and postdocs now hold faculty positions
- Served on over 40 graduate committees
- Provided research experiences for 49 undergraduates and 5 high school students

Public Outreach:

- Advisor for American of Microbiology/Public Broadcasting
  Production: "Intimate Strangers, Unseen Life on Earth" 1997-1998
- Member of Microbial Literacy Collaborative, an *American Society for Microbiology* organization dedicated to disseminating knowledge about microbiology to the general public 1997
- Faculty Arms Control Committee, with Paul Olum, Freeman Dyson and Aaron Novik, University of Oregon 1982
- Leader, Nuclear Freeze Campaign, Springfield Chapter 1982

Diversity:

- Developed and deliver teacher professional development workshops (2015-present): *Carbon Cycling by Microorganisms*, in OSU's Science & Math Investigative Learning Experiences (SMILE) program, preparing minority, low-income, historically underrepresented, and other educationally underserved students from rural areas to graduate from high school, enroll and succeed in higher education, and pursue STEM careers. <u>These workshops supported by grant awards to S.J.G.</u>
- Search advocacy training and updates
- Hire and supervise a large, diverse group of students and postdocs
- Minority student recruiting as MCB Director contributing to successful training grant applications.
- *Microbial Oceanography: Biogeochemistry, Ecology and Genomics of Oceanic Microbial Ecosystems* summer course at the Bermuda Institute of Ocean Sciences (BIOS), 2002-2013, trained > 95 diverse undergraduate and graduate students, and postdocs from > 20 countries.

Recent Invited talks (incomplete):

- Research lecture, Ocean Sciences Meeting, San Juan Puerto Rico, Feb 28, 2019. *Pangenomics Analysis Reveals Diversification of Enzyme Families and Niche Specialization in Globally Abundant SAR202 Bacteria*
- Invited Lecture, graduate course in chemical oceanography, GEOMAR, Germany, Aug 29, 2019. *Pangenomics Analysis Reveals Diversification of Enzyme Families and Niche Specialization in Globally Abundant SAR202 Bacteria*
- Invited Lecture, graduate course in chemical oceanography, Woods Hole Oceanographic Institution, March 3, 2018. *Systems Biology and Ecology of Streamlined Bacterioplankton*

- Invited Lecture, Barbados, PRC, Feb. 28, 2018. *Systems Biology and Ecology of Streamlined Bacterioplankton.* Invited Lecture, Barbados, PRC, Feb. 28, 2018. *Systems Biology and Ecology of Streamlined Bacterioplankton*
- Plenary Lecture, NSFC, Shenzen, PRC, Jan. 10, 2018. *Systems Biology and Ecology of Streamlined Bacterioplankton.*
- Invited Lecture, BIOS, July 10, 2017. *Historical Transformations of the Global Carbon Cycle by Microbial Innovation*.
- Plenary Lecture, ASM17, New Orleans, June 4, 2017. *Reconstructing the Ocean Carbon Cycle from Microbial Genomes.*
- Invited Lecture, OSU Microbiome Symposium, May 12, 2017. *Historical Transformations of the Global Carbon Cycle by Microbial Innovation*.
- Invited Lecture, OSU Microbiology Student Association Symposium. April 8, 2017. *Small game hunting in the Bermuda Triangle.*
- Invited Lecture, USC, Jan 24, 2017. *Streamlining in Ocean Bacterioplankton.*
- Invited Lecture, Berkeley Laboratory, Aug. 29, 2016. *Reconstructing the Ocean Carbon Cycle from Microbial Genomes.*

University Service (since 2010):

- Taskforce on Interdisciplinary Graduate Education Programs (TIGEP) 2018-2019
- COS Deans Advisory Council, 2017-20
- COS P&T Committee, 2013-2014, 2019-20
- OSU Faculty Senate, 2016-2019
- Microbiome Initiative Advisory Board, 2016-present
- Faculty Senate Baccalaureate Core Curriculum Committee, 2015-17
- Search Committee, Vice President for Research, 2015
- Marine Science Initiative Advisory Committee, 2014-15
- College of Science Awards Committee, 2013-16
- College of Science P&T Committee, 2013-16
- Co- Chair of search committee, BIG Strategic Initiative, *Nucleic Acids Bioinformaticist,* 2011-2012
- Co-PI of Strategic Initiative, *Computational and Genome Biology* 2005-2010

Sponsored Seminars and Symposia (since 2007):

- Co-organizer, Center for Genome Research and Biocomputing Annual Retreat, Sept. 20-21, 2014
- Co-organizer of session, *Putting Microbial Genomes to Work in Ecosystem Science,* Joint Aquatic Sciences Meeting, Portland, OR May 19, 2014
- Organizer, Symposium, *The Metagenome in Action,* 13th International Symposium on Microbial Ecology, Seattle, WA Aug. 23-27, 2010
- Organizer, *Workshop on Minimal Genomes,* National Science Foundation, Arlington VA. Aug. 10-11, 2009
- Organizer, *Workshop on the Implications and Opportunities of the Marine Genomics Revolution*, Bermuda Institute of Ocean Sciences. Oct. 29-31, 2007

Professional Societies:

- American Society for Microbiology
- American Association for the Advancement of Science
- American Society of Limnology and Oceanography

Recent Professional Service:

- JGI User Committee 2019-present
- JGI/EMSL Grant Review Panels 2017-2018
- Active Ad Hoc reviewer for Nature, Nature Microbiology, Science, and other journals 2017
- Founding Co-editor, *Annual Reviews of Marine Science* 2007-present
- Editor, *MBio* 2012-present
- Nominating Committee, Board of Governors,

American Academy for Microbiology 2012-present
- USFCC/J. Roger Porter Award Nominations Committee 2012-present
http://www.annualreviews.org/catalog/2009/ma01.aspx 2007-present
- Associate Editor, *The ISME Journal* 2007-present
- Associate Editor, *Environmental Microbiology* 2000-present

Patents: U.S. No. 6,951,714, *High-Throughput Microbial Culturing*, awarded 2005.

High Throughput Culturing Laboratory: Giovannoni founded and directs the OSU High Throughput Culturing Laboratory (HTCL), which distributes cultures and DNA from oligotrophic marine bacteria to research institutions around the world. > Forty laboratories have received materials from the HTCL.

Current Research Grants (amounts available on request; some of these are "user" grants):

2015-2020 Simons Foundation International. *BIOS-SCOPE - A collaborative program for the study of microbial oceanography in the North Atlantic Subtropical Gyre.*

2015-2020 Joint Genome Institute director's grant, with Trent Northen. *Carbon cycle metabolomics of globally abundant SAR11 bacteria*

2016-2020 National Science Foundation. *Dimensions: Collaborative Research: Unraveling thiamin cycling complexity and impacts on microbial networks.* Co-P.I. with A. Z. Worden. DEB 1639033.

2018-2021 National Science Foundation. *Regulation of nutrient assimilation in streamlined oligotrophic microorganisms.* IOS 1838445

2018-2021 Environmental Molecular Sciences Laboratory (EMSL) user grant. *Assessing the environmental activity of ultra-small cells with deuterium oxide labeling and proteomics.* Proposal ID: 50275

2019-2024 National Institute of Health. *Impacts of Benzo[a]pyrene on Microbiome Development across Lifespan and Generations and the Behavioral Consequences*. Co-P.I. NIH R01ES030226

2020-2023 National Science Foundation. Interactions between phytoplankton and bacterioplankton mediated by volatile organic compounds. Co-P.I. with K. Halsey. OCE 1948163

Peer Reviewed Articles (since 1990):

158. Bolaños, L.M., L.Karp-Boss, C.J.Choi A. Z. Worden, J. R. Graff, N.Haëntjens, A. P. Chase, Alice Della Penna, P. Gaube, F. Morison S.Menden-Deuer, T. K. Westberry, E. Boss, M. J. Behrenfeld, S.J. Giovannoni. 2020. Small phytoplankton dominate western North Atlantic biomass. ISME J. doi: 10.1038/s41396-020-0636-0

157. Moore, E.R., C.L. Davie-Martin, S.J. Giovannoni, and K.H. Halsey. 2019. Pelagibacter metabolism of diatom-derived volatile organic compounds imposes an energetic tax on photosynthetic carbon fixation. Environ. Microbiol. doi.org/10.1111/1462-2920.14861

156. Saw, J.H.W., T. Nunoura, M. Hirai, Y. Takaki, R. Parsons, M. Michelsen, K. Longnecker, E.B. Kujawinski, R. Stepanauskas, Z. Landry, C.A. Carlson, S.J. Giovannoni. 2019. Pangenomics reveal diversification of enzyme families and niche specialization in globally abundant SAR202 bacteria. mBIO doi.org/10.1128/mBio.02975-19

155. Delmont, T.O., E. Kiefl, O. Kilinc, O. C. Esen, I. Uysal, M.S. Rappé, S. Giovannoni and A.M. Eren. 2019. Single-amino acid variants reveal evolutionary processes that shape the biogeography of a global SAR11 subclade. eLife. 10.7554/eLife.46497

154. Noell, S. and S.J. Giovannoni. 2019. SAR11 bacteria have a high affinity and multifunctional glycine betaine transporter. Environ. Microbiol. 21:2559-2575. DOI: 10.1111/EMI.14649

153. Giovannoni S.J., K.H. Halsey, J. Saw, O. Muslin, C. Suffridge, J. Sun, Chi-Ping Lee, E.R. Moore, B.

Temperton, and S. Noell. 2019. A parasitic arsenic cycle that shuttles energy from phytoplankton to heterotrophic bacterioplankton. mBIO DOI:10.1128/MbIO.00246-19

152. White, A.E., S.J. Giovannoni, Y. Zhao, K. Vergin and C.A. Carlson. 2019. Elemental content and stoichiometry of SAR11 chemoheterotrophic marine bacteria. Limnol. and Oceanogr. Letts. 4:44-51. doi.org/10.5061/dryad.1749362/2

151. Zhao, Y., F. Qina, R. Zhang, S. J. Giovannoni, Z. Zhanga, J. Sun, S. Du. 2019. Pelagiphages in the *Podoviridiae* family integrate into host genomes. Environ. Microbiol. 21:1989-2001. doi:10.1111/1462-2920.14487

150. Sun, J., M.A. Mausz, Y. Chen and S. J. Giovannoni. 2019. Microbial trimethylamine metabolism in marine environments. Environ. Microbiol. 21:513-520. doi:10.1111/1462-2920.14461

149. Landry, Z., K. Vergin, C. Mannenbach, S. Block Q. Yang, P. Blainey and S.J. Giovannoni. 2018. Optofluidic single-cell genome amplification of sub-micron bacteria in the ocean subsurface. Frontiers in Microbiol. doi.org/10.3389/fmicb.2018.01152

147. Gutowska, M.A., B. Shome, S. Sudek, D.L. McRose, M. Hamilton, S.J. Giovannoni, T.P. Begley and A.Z. Worden. 2017. Globally important haptophyte algae use exogenous pyrimidine compounds more efficiently than thiamin. mBIO. doi: 10.1128/mBio.01459-17

146. Halsey, K.H., S.J. Giovannoni, M. Graus, Y. Zhao, Z. Landry, J.C. Thrash and J. de Gouw. 2017. Biological cycling of volatile organic carbon by phytoplankton and bacterioplankton. Limnol. Oceanog. doi: 10.1002/lno.10596

145. Landry, Z., B.K. Swan, G.J. Herndl, R. Stepanauskas, and S.J. Giovannoni. 2017. SAR202 genomes from the dark ocean predict pathways for the oxidation of recalcitrant dissolved organic matter. mBIO doi: 10.1128/mBio.00413-17

144. Vergin, K.L., N. Jhirad, J. Dodge, C.A. Carlson and S.J. Giovannoni. 2017. Marine bacterioplankton consortia follow deterministic, non-neutral community assembly rules. Aquat. Microb. Ecol. 10.3354/ame01824

143. Choi, C.J., C. Bachy, C. Poirier, G.S. Jaeger, L. Sudek, S. J. Giovannoni, A. Mahadevan, A.Z. Worden. 2017. Newly discovered deep-branching marine plastid lineages are numerically rare but globally distributed. Current Biol. 27:R15-16

142. Giovannoni, S.J., 2017. SAR11 bacteria - the most abundant plankton in the oceans. Ann. Rev. Marine Sci. 9:231-55. doi.org/10.1146/annurev-marine-010814-015934

141. Zhao, X., C. Schwartz, J. Pierson, S.J. Giovannoni, J.R. McIntosh, D. Nicastro. 2016. Three-Dimensional Structure of the Ultra-oligotrophic marine bacterium Pelagibacter. Appl. Environ. Microbiol. doi: 10.1128/AEM.02807-16

140. Smith D.P., C.D. Nicora, M.S. Lipton, P. Carini, R.D. Smith, and S.J. Giovannoni. 2016. Proteome remodeling in response to sulfur limitation in '*Candidatus* Pelagibacter ubique. mSystems. DOI: 10.1128/mSystems.00068-16

139. Sun, J., J.D., Todd, J.C. Thrash, M. Qian, Y. Qian, B. Temperton, J. Guo, E.K. Fowler, J. Aldrich, P. De Leenheer, S.H. Payne, A.W.B. Johnston, C. L. Davie-Martin, K.H. Halsey and S.J. Giovannoni. 2016. The abundant marine bacterium Pelagibacter simultaneously catabolizes dimethylsulfoniopropionate to the gases dimethyl sulfide and methanethiol. Nature Microbiol. doi:10.1038/nmicrobiol.2016.65

138. Glass, J.B., C.B. Kretz, S. Ganesh, P. Ranjan, S.L. Seston, K.N. Buck, W.M. Landing, P.L. Morton, J.W. Moffett, S.J. Giovannoni, K.L. Vergin and F.J. Stewart. 2015. Meta-omic signatures of microbial metal and nitrogen cycling in marine oxygen minimum zones. Frontiers in Microbiology 6:998

137. Carini, P., B.A.S. Van Mooy, J.C. Thrash, A.E. White, Y. Zhao, E.O. Campbell, H. Fredricks, and S. J. Giovannoni. 2015. SAR11 lipid renovation in response to phosphorus starvation. PNAS 112:7767-72.

doi/10.1073/pnas.1505034112

136. Worden, A.Z., M.J. Follows, S.J. Giovannoni, S. Wilken, A.E. Zimmerman, P.J. Keeling. 2015 Rethinking the marine carbon cycle: factoring in multifarious lifestyles of microbes. Science 347 DOI: 10.1126/science.1257594

135. Giovannoni, S.J., J.C. Thrash, and B. Temperton. 2014. Implications of streamlining theory for microbial ecology. ISME J. doi: 10.1038/ismej.2014.60

134. Carini, P., A.E. White, E.O. Campbell, and S.J. Giovannoni. 2014. Methane production by phosphate-starved SAR11 chemoheterotrophic marine bacteria. Nature Com. 5:4346. DOI: 10.1038/ncomms5346

133. Carini, P., E.O. Campbell, J. Morré, S.A. Sañudo-Wilhelmy, B. Temperton, S.E. Bennett, J.C. Thrash, T. Begley and S.J. Giovannoni. 2014. Discovery of a SAR11 growth requirement for thiamin's pyrimidine precursor and its distribution in the Sargasso Sea. 2014. ISME J. doi: 10.1038/ismej.2014.61

132. Parsons, R.J., C.E. Nelson, C.A. Carlson, C.C. Denman, A.J. Andersson, A.L. Kledzik, K.L. Vergin, S.P. McNally, A.H. Treusch and S.J. Giovannoni. 2014. Marine bacterioplankton community turnover within seasonally hypoxic waters of a subtropical sound: Devil's Hole, Bermuda. Environ. Microbiol. doi:10.1111/1462-2920.12445

131. Thrash, J.C. Thrash, B.Temperton, B.K. Swan, Z.C. Landry, T. Woyke, E.F. DeLong, R. Stepanauskas and S.J. Giovannoni. 2013. Genome features of a deep ocean SAR11 bathytype revealed by single-cell genomics and metagenomics. ISME J. 7: 1322–1332. doi:10.1038/ismej.2013.32

130. Ferla, M.P., J.C. Thrash, S.J. Giovannoni and W.M. Patrick. 2013. New rRNA gene-based phylogenies of the Alphaproteobacteria provide perspective on major groups, mitochondrial ancestry and phylogenetic instability. PlosOne. DOI: 10.1371/journal.pone.0083383

129. Smith D.P., J.C. Thrash, C.D. Nicora, M.S. Lipton, K.E. Burnum-Johnson, P. Carini, R.D. Smith, and S.J. Giovannoni. 2013. Proteomic and transcriptomic analysis of *Candidatus* Pelagibacter ubique describes the first P_{II}-independent response to nitrogen limitation in a free-living alphaproteobacterium. mBIO. DOI:10.1128/mBio.00133-12

128. Vergin K.L., B. Done, C.A. Carlson, S.J. Giovannoni. 2013. Spatiotemporal distributions of rare bacterioplankton populations indicate a variety of adaptive strategies in the oligotrophic ocean. Aquat. Microb. Ecol. 71:1-13. doi 10.3354/ame01661

127. Giovannoni, S.J., B. Temperton and Y. Zhao. 2013. Reply to SAR11 virus and defensive host strains (Selina Våge, Julia E. Storesund, T. Frede Thingstad). Nature. 499:E4-5.

126. Swan, B., B. Tupper, A. Sczyr, F.M. Lauro, M. Martinez-Garcia, J. González, H. Luo, J.J. Wright, Z.C. Landry, N.W. Hanson, B.P. Thompson, N.J. Poulton, P. Schwientek, S.G. Acinas, S.J. Giovannoni, M.A. Moran, S.J. Hallam, R. Cavicchioli, T. Woyke, and R. Stepanauskas. 2013. Prevalent genome streamlining and latitudinal divergence of planktonic bacteria in the surface ocean. Proc. Natl. Acad. Sci. U.S.A. doi: 10.1073/pnas.1304246110

125. Vergin K.L., B. Beszteri, A. Monier, J.C. Thrash, B. Temperton, A.T. Treusch, F. Kilpert, A.Z. Worden, S.J. Giovannoni. 2013. High-resolution SAR11 ecotype dynamics at the Bermuda Atlantic Time-series Study site by phylogenetic placement of pyrosequences. ISME J. doi: 10.1038/ismej.2013.32

124. Zhao, Y., B. Temperton, J.C. Thrash, M.S. Schwalbach, K.L. Vergin, Z.C. Landry, M. Ellisman, T. Deerinck, M. B. Sullivan and S. J. Giovannoni. 2013. Abundant SAR11 viruses in the ocean. Nature 494:357-60. doi: 10.1038/nature11921

123. Carini, P, L. Steindler, S. Beszteri and S. J. Giovannoni. 2012. Nutrient requirements for growth of the extreme oligotroph 'Candidatus Pelagibacter ubique' HTCC1062 on a defined medium. ISME J. doi:10.1038/ismej.2012.122

122. Grote, J., J.C. Thrash, M. J. Huggett, Z.C. Landry, P. Carini, S.J. Giovannoni, and M. S. Rappé, 2012.

Streamlining and core genome conservation among highly divergent members of the SAR11 clade. mBio doi:10.1128/mBio.00252-12

121. Halsey, K.H., Carter, A. E., Giovannoni, S. J. 2011. Synergistic metabolism of a broad range of C1 compounds in the marine methylotrophic bacterium HTCC2181. Environ. Microb. doi:10.1111/j.1462-2920.2011.02605.x.

120. Treusch, A.H., E. Demir, K.L. Vergin, A.Z. Worden, C.A. Carlson, M.G. Donatz, R.M. Burton and S.J. Giovannoni. 2011. Phytoplankton distribution patterns in the northwestern Sargasso Sea revealed by small subunit rRNA genes from plastids. ISME J. 6:481-92 doi:10.1038/ismej.2011.117

119. Sun, J., L. Steindler, J.C. Thrash, K.H. Halsey, D.P. Smith, A.E. Carter, Z.C. Landry and S.J. Giovannoni. 2011. One carbon metabolism in SAR11 pelagic marine bacteria. PLoS One. 6:e23973

118. Thrash, J.C., A. Boyd, R.J. Yoder, M.J. Huggett, P. Carini, J. Grote, M.S. Rappe, B. Robberts, J.W. Spatafora, and S.J. Giovannoni. 2011. Phylogenomic evidence for a common ancestor of mitochondria and the SAR11 clade. Sci. Reports 1. doi:10.1038/srep00013

117. Bertagnolli, A.D., A.H. Treusch O.U. Mason O.U., U. Stingl, K.L. Vergin, F. Chan, B. Beszteri, S.J. Giovannoni. 2011. Bacterial diversity in the bottom boundary layer of the inner continental shelf of Oregon, USA. Aquatic Ecol. 64:15-25.

116. Steindler, L., M.S. Schwalbach, F. Chan, and S.J. Giovannoni. 2011. Energy starved candidatus pelagibacter ubique substitutes light-mediated ATP production for endogenous carbon respiration. PLoS One 9:e19725

115. Wang, L., S. Chen, K. Vergin, S.J. Giovannoni, S.W. Chan, M.S. DeMott, K. Taghizadeh, O.X. Cordero, M. Cutler, S. Timberlake, E.J. Alma, M. Polz, J. Pinhassi, Z. Deng, and P.C. Dedon. 2011. Phosphorothioation is widespread and quantized in bacterial genomes. Proc. Natl. Acad. Sci. U.S.A. 108:2963-8.

114. Thrash, J. C., Cho, J.-C., Bertagnolli, A. D., Ferriera, S., Johnson, J., Vergin, K. L., and Giovannoni, S. J. 2011. Genome sequence of the marine *Janibacter* sp. strain HTCC2649. J. Bac. 193: 584-5. doi:10.1128/JB.01298-10

113. Mason O.U., T. Nakagawa, M. Rosner, J.D. Van Nostrand, J. Zhou, A. Maruyama, M.R. Fisk, and Stephen J. Giovannoni. 2010. First investigation of the microbiology of the deepest layer of ocean crust. PLoS One. 55:e15399.

112. Sowell, S.M., P.E. Abraham, M. Shah, N.C. Verberkmoes, D.P. Smith, D.F. Barofsky, S.J. Giovanonni. 2011. Environmental proteomics of microbial plankton in a highly productive coastal upwelling system. ISME J. 5:856-65. Epub 2010 Nov 11.

111. Kido-Soule, M.C., K. Longnecker, S.J. Giovannoni, and E.B. Kujawinski. 2010. Impact of instrument and experiment parameters on reproducibility and repeatability of peaks within ultrahigh resolution ESI FT-ICR mass spectra of natural organic matter. Org. Geochem. 41:725-33.

110. Smith D P., J.B. Kitner, A. D. Norbeck, M.S. Lipton, M.S. Schwalbach, L. Steindler, C.D. Nicora, R. D. Smith, and S. J. Giovannoni. 2010. Integrated transcriptional and translational regulatory responses to iron limitation in the globally distributed marine bacterium *Candidatus* Pelagibacter ubique. PLoS One. 5:1-10.

109. Beszteri B., B. Temperton, S. Frickenhaus and S.J. Giovannoni. 2010. Average genome size: a potential source of bias in comparative metagenomics. ISME J. 4:1075-7.

108. Schwalbach, M. S., H.J. Tripp, L. Steindler, D.P. Smith and S.J. Giovannoni. 2009. The presence of the glycolysis operon in SAR11 genomes is positively correlated with ocean productivity. Environ. Microbiol. 12:490-500. doi:10.1111/j.1462-2920.2009.02092.x

107. Meyer, M. M., T. D. Ames, D. Smith, Z. Weinberg, M. S. Schwalbach, S.J. Giovannoni and R.R.

Breaker. 2009. Identification of candidate structured RNAs in the marine organism '*Candidatus* Pelagibacter ubique'. BMC Genomics 10:268.

106. Treusch A.H., K.L. Vergin, L.A. Finlay, M.G. Donatz, R.M. Burton, C.A. Carlson and S.J. Giovannoni. 2009. Seasonality and vertical structure of microbial communities in an ocean gyre. ISME J. 3:1148-63. doi:10.1038/ismej.2009.60.

105. Kujawinski, E.B., K. Longnecker, N.V. Blough, R. Del Vecchio, L. Finlay, J.B. Kitner and S.J. Giovannoni. 2009. Novel markers for terrestrial and marine sources in marine dissolved organic matter using ultrahigh resolution electrospray ionization Fourier-transform ion cyclotron resonance mass spectrometry. Geochem. et Cosmochem. 73: 4384-99.

104. Carlson, C.A., R. Morris, R. Parsons, A.H. Treusch, S.J. Giovannoni, K. Vergin. 2009. Seasonal patterns in SAR11 populations in the euphotic and mesopelagic zones of the Northwestern Sargasso Sea. ISME J. 3:283-95. Epub 2008 Dec 4

103. Tripp, H.J., M.S. Schwalbach, M.M. Meyer, J.B. Kitner, R.R. Breaker and S.J. Giovannoni. 2009. Unique glycine-activated riboswitch linked to glycine-serine auxotrophy in SAR11. Environ. Microbiol. 11:230-238.

102. Mason, O.U., C.A. Di Meo-Savoie, J.D. Van Nostrand, J. Zhou, M.R. Fisk and S.J. Giovannoni. 2008. Prokaryotic diversity, distribution, and preliminary insights into their role in biogeochemical cycling in marine basalts. ISEM J. Oct 9. doi: 10.1038/ismej.2008.92

101. Sowell, S.M., L.J. Wilhelm, A.D. Norbeck, M.S. Lipton, C. Nicora, D.F. Barofsky, C.A. Carlson, R. D. Smith and S.J. Giovanonni. 2008. Transport functions dominate the SAR11 metaproteome at low nutrient extremes in the Sargasso Sea. ISME J. 74:4091-100.

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