

CURRICULUM VITAE

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H Factor: 100

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 Carbon Cycle
- Microbial Genome Evolution
- Biochemistry of Microbial Carbon Oxidation in the Oceans

Professional Experience:

- University Distinguished Professor, Oregon State University 2012-present
- Head, Department of Microbiology, Oregon State University, Corvallis 2020-2023
- 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

Institutional Affiliations:

- Lawrence Berkeley National Laboratory
- Bermuda Institute of Ocean Science

Honors and Awards:

- Fellow, Hanse-Wissenschaftskolleg 2024
- 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

Teaching:

- *Microbial Genome Evolution and Biodiversity* (MB420/520; 3 lecture hours, yearly)
- *Microbial Bioinformatics and Genome Evolution* (MB 668; 4 lecture hours), 1990-2023
- 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 >50 graduate committees.
- Provided research experiences for >50 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 Novick, University of Oregon 1982
- Leader, Nuclear Freeze Movement, Springfield Chapter 1982

Diversity:

- Hiring and mentoring of a large group of students and postdocs with diversity metrics significantly above college and university averages
- Developed and delivered 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. These workshops supported by grant awards to S.J.G.
- Search advocacy training and updates
- 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 highly diverse undergraduate and graduate students and postdocs from > 20 countries.

University Service (since 2010):

- Research Council, 2023-2025
- COS P&T Committee, 2013-2014, 2019-20; 2023-2025
- Cell and Molecular Microbiologist Search Committee 2024-25
- OSU Postdoctoral Association Professional Development Award Reviewer 2024-
- Chair, Search Committee, Head, Chemistry Department, 2022.
- Head, Department of Microbiology, 2020-23
- COS Deans Advisory Council, 2017-20
- Taskforce on Interdisciplinary Graduate Education Programs (TIGEP) 2018-19
- 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*, 2011-12
- Co-PI of Strategic Initiative, *Computational and Genome Biology* 2005-10

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:

- Founding Co-editor, *Annual Reviews of Marine Science* 2007-present
- 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
- 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.

U.S. No. 17/511,141 Kivenson, V. and S.J. Giovannoni, *Reducing trimethylamine or trimethylamine-n oxide levels in a subject*, filed 2022.

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):

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| 2019-2024 | National Institute of Health. <i>Impacts of Benzo[a]pyrene on Microbiome Development across Lifespan and Generations and the Behavioral Consequences</i> . Co-P.I. with Tom Sharpton NIH R01ES030226 |
| 2020-2023 | National Science Foundation. <i>Interactions between phytoplankton and bacterioplankton mediated</i> |

by volatile organic compounds. Co-P.I. with K. Halsey. OCE 1948163. \$684,996.

- 2020-2025 Simons Foundation International. *BIOS-SCOPE - A collaborative program for the study of microbial oceanography in the North Atlantic Subtropical Gyre*. Multi-Investigator Program Grant; \$1,288,000 to SJG.
- 2021-2024 Simons Foundation. *Viral impacts on volatile organic carbon and energy cycling in the ocean - Buchholz fellowship*. P.I., with Co-P.I. K. Halsey. \$270,000.
- 2022-2023 OSU College of Science SciRIS Phase 2 Award. *The Hypoxic Barrier: Oxygenase Enzyme Kinetics and Ocean Health*, with Co-P.I. Francis Chan. \$75,000.
- 2024-2026 OSU Agricultural Research Foundation Competitive Grant Program. *A new source of ethanol for biofuels: common marine unicellular cyanobacteria*. \$15,000.

Recent Public Presentations (In Reverse Order):

Invited Lecture, *Evolution of parallel pathways for complex organic matter oxidation in SAR202 Marine Bacteria*, Bremen, ISME 19, Cape Town, Africa, Aug.23, 2024.

Invited Lecture, *Evolution of parallel pathways for complex organic matter oxidation in SAR202 Marine Bacteria*, Bremen, June 27, 2024.

Invited Lecture, *Outliers: Extreme Selection for Minimalism in Ocean Bacterioplankton*. Swedish University of Agricultural Sciences, Uppsala, June 23, 2024.

Invited Lecture, *Outliers: Extreme Selection for Minimalism in Ocean Bacterioplankton*, University of Oldenburg, ICBM, May 8, 2024.

Invited Hanse-Wissenschaftskolleg Fellow Lecture, *Historical Transformations of the Global Carbon Cycle by Microbial Innovation*, May 22, 2024.

Invited Lecture, *Evolution of parallel pathways for complex organic matter oxidation in SAR202 Marine Bacteria*, JGI, Berkeley, Jan. 27, 2024.

Invited Lecture in Symposium Space, *the Final Frontier in Microbiome Research*; Lecture title: *Ocean carbon sequestration and the evolution of recalcitrant carbon metabolism in marine bacteria*. Princeton, Institute for Theoretical Science, Jan. 18, 2023.

Invited Lecture, *Nanobacteria: Key players in the earth's carbon cycle*, University of Tübingen, Germany, June 6, 2022.

Invited Lecture, *Nanobacteria: Key players in the earth's carbon cycle*, Biozentrum, Basel, Switzerland, June 3, 2022.

Invited Symposium Lecture, *Marine Microbiology Gordon Conference*; Lecture title: *Outliers: Microbial Cooperation and Competition in Expanding Low-Productivity Ocean Regions*, Les Diablerets, Switzerland, June 3, 2022.

Peer Reviewed Articles (since 1990):

Bergauer, K., C. P. Suffridge, F. Wittmers, S. Sudek, S.J. Giovannoni & A. Z. Worden. Dark ocean archaeal and bacterial chemoautotrophs drive vitamin B1 production in mesopelagic zones. ISME J, In Review.

Stephens, B.M., P. Stincone, D. Petras, C.J. English, K. Opalk, S.J. Giovannoni and C.A. Carlson. Oxidation state of bioavailable dissolved organic matter influences bacterioplankton respiration and

growth efficiency. 10.21203/rs.3.rs-2658570/v1. In Review.

Zhang, Y., Y.H. He, Z.X. Xie, Z.A. Bai, G.S. Hu, M.H. Wang, S.J. Giovannoni, and D.Z. Wang. The proteome of SAR11 marine bacteria is highly phosphorylated. *Nature Microbiology*. In Review.

Zhang, Y., Z.X. Xie, Y. Zheng, G.S. Hu, Y.H. He, D.X. Li, H. Wang, C. Cai, L. Lin, W. Qin, S.J. Giovannoni, D.Z. Wang. The functional proteome landscape of a cosmopolitan oceanic bacterium. *ISME J*. In Review.

Padaki, V.G., X. Mayali, P.K. Weber, S. J. Giovannoni, K. Abraham, Kerry Jacobs, L. Collart, K.H. Halsey. Volatile Organic Compound Specialists in the Phycosphere. *Nature Microbiol*. In Review.

Wolf, S., C. Jayawickrama, C.A. Carlson, C. Deutsch, E.W. Davis II, F. Chan, and S.J. Giovannoni. Microbial Carbon Oxidation in Seawater Below the Hypoxic Threshold. *Sci. Reports*. In Review.

McParland, E.L., F. Wittmers, L. M. Bolaños, C.A. Carlson, R. Curry, S.J. Giovannoni, M. Michelsen, R.J. Parsons, M.C. Kido Soule, G.J. Swarr, B. Temperton, K. Vergin, A. Z. Worden, K. Longnecker, E.B. Kujawinski. Seasonal exometabolites are regulated by essential microbial metabolisms in the oligotrophic ocean. *bioRxiv* 2024.03.05.583599; 10.1101/2024.03.05.583599. In Review.

184. Eigemann, F., J. Hoffmann, C. Schampera, S. Liu, L.M. Bolaños, M. Heemeyer, C.A. Carlson, S. Giovannoni, F.L. Hellweger. 2024. Emergent ecology in a microscale model of the surface ocean. *mBIO*. In Press.

185. Brennan, E.J., S. Noell, E.W. Davis II, S.J. Giovannoni, and C.P. Suffridge. 2024. Whole cell affinity for 4-amino-5-hydroxymethyl-2-methylpyrimidine (HMP) of the marine bacterium *Candidatus Pelagibacter* st. HTCC7211 can explain marine dissolved HMP concentrations. *Environ. Microbiol. Reports* 10.1111/1758-2229.70023

182. Comstock, J., L.C. Henderson, H.G. Close, S. Liu, K. Vergin, A.Z. Worden, F. Wittmers, E. Halewood, S.J. Giovannoni, C.A. Carlson, 2024. Marine particle size-fractionation indicates organic matter is processed by differing microbial communities on depth-specific particles, *ISME Communications*. doi.org/10.1093/ismeco/ycae090

181. Eckmann, C.A., C. Bachy, F. Wittmers, J. Strauss, L. Blanco-Bercial, K.L. Vergin, R.J. Parsons, R.M. Kudela, R. Johnson, L.M. Bolaños, S.J. Giovannoni, C.A. Carlson, A.Z. Worden. 2024. Recurring seasonality exposes dominant species and niche partitioning strategies of open ocean picoeukaryotic algae. *Comm, Earth & Environ.* 5:266.

180. Kramer, S.J., L.M. Bolaños, D. Catlett, A.P. Chase, M. Behrenfeld, E.S. Boss, E.T. Crockford, S.J. Giovannoni, J.R. Graff, N. Haëntjens, L. Karp-Boss, E.E. Peacock, C.S. Roesler, H.M. Sosik, D.A. Siegel. 2024. Toward a synthesis of phytoplankton community composition methods for global-scale application. *Limnol. and Oceanog.: Methods*. [10.1002/lom3.10602](https://doi.org/10.1002/lom3.10602)

183. Halsey, K.H. & Giovannoni, S.J. 2023. Biological controls on marine volatile organic compound emissions: A balancing act at the sea-air interface. *Earth Sci Rev* 240, 104360

179. Carrión, O., C.Y. Li, M. Peng, J. Wang, G. Pohnert, M. Azizah, X. Zhu, A.R. Curson, K.S. Walsham, X. Zhang, S. Monaco, J.M. Harvey, X.L. Chen, C. Gao, N. Wang, X. Wang, P. Wang, P. Nicholson, S.J. Giovannoni, C.P. Lee, C.P. Suffridge, Y. Zhang, C. Xue, D. Wang, Y. Zhang and J.D. Todd. 2023. Function and wide distribution of DMSOP cleaving enzymes in marine organisms. *Nature Microbiol.* 8:2326-2337. 10.1038/s41564-023-01526-4

178. Singleton, S.L., E.W. Davis II, H.K. Arnold, A.M.Y. Daniels, S. M. Brander, R. J. Parsons, T.J. Sharpton and S. J. Giovannoni. 2023. Identification of rare microbial colonizers of plastic materials incubated in a coral reef environment. *Frontiers in Microbiol.* 10.3389/fmicb.2023.1259014

177. Lim, Y., J.H. Seo, S.J. Giovannoni, I. Kang, and J.C. Cho. 2023. Cultivation of SAR202 Bacteria from the Ocean. *Nat. Commun.* 14: 5098. 10.1038/s41467-023-40726-8

176. Noell, S.E., F.L. Hellweger, B. Temperton and S.J. Giovannoni. 2023. A Reduction of Transcriptional Regulation in Aquatic Oligotrophic Microorganisms Enhances Fitness in Nutrient-Poor Environments. *Mol. Microbiol. Rev.* 10.1128/membr.00124-22
175. Noell, S.E., E. Brennan, Q. Washburn, E.W. Davis II, F.L. Hellweger, B. Temperton and S.J. Giovannoni. 2023. Differences in the regulatory strategies of marine oligotrophs and copiotrophs reflect differences in motility. *Environ. Microbiol.* 10.1101/2022.07.21.501054
174. Halsey, K.H. Halsey, S.J. Giovannoni, and C.L. Davie-Martin. 2023. Biological controls on marine volatile organic compound emissions: A balancing act at the air-sea interface. *Earth Science Reviews* 240; [10.1016/j.earscirev.2023.104360](https://doi.org/10.1016/j.earscirev.2023.104360)
173. Bolaños, L.M., K. Tait, P.J. Somerfield, S.J. Parsons, S.J. Giovannoni, T. Smyth, B. Temperton. 2022. Influence of short- and long-term processes on SAR11 communities in open ocean and coastal systems. *ISME Commun.* 10.1038/s43705-022-00198-1
172. Wittmers, F., D.M. Needham, E. Hehenberger, S.J. Giovannoni, A.Z. Worden. 2021. Genomes from Uncultivated Pelagiphages Reveal Multiple Phylogenetic Clades Exhibiting Extensive Auxiliary Metabolic Genes and Cross-Family Multigene Transfers. *mSystems* [10.1128/msystems.01522-21](https://doi.org/10.1128/msystems.01522-21)
171. Baetge, N., L.M. Bolaños, A.D. Penna, P. Gaube, S. Liu, K. Opalk, J.R. Graff, S. J. Giovannoni, M.J. Behrenfeld, C.A. Carlson. 2022. Bacterioplankton response to physical stratification following deep convection. *Elementa* [10.1525/elementa.2021.00078](https://doi.org/10.1525/elementa.2021.00078)
170. Liu, S., K. Longnecker, E.B. Kujawinski, K. Vergin, L.M. Bolaños, S.J. Giovannoni, R. Parsons, K. Opalk, E. Halewood, D.A. Hansell, R. Johnson, R. Curry, and C.A. Carlson. 2022. Linkages Among Dissolved Organic Matter Export, Dissolved Metabolites, and Associated Microbial Community Structure Response in the Northwestern Sargasso Sea on a Seasonal Scale. *Frontiers in Microbiol.* [10.3389/fmicb.2022.833252](https://doi.org/10.3389/fmicb.2022.833252)
169. Kim, S., I. Kang, J.W. Lee, C.O. Jeon, S.J. Giovannoni, and J.C. Cho. 2021. Heme auxotrophy in abundant aquatic microbial lineages. *Proc. Natl. Acad. Sci. U.S.A.* 10.1073/pnas.2102750118
168. Moore, E.R., A.J. Weaver, E.W. Davis, S.J. Giovannoni, and K.H. Halsey. 2021. Metabolism of key atmospheric volatile organic compounds by the marine heterotrophic bacterium *Pelagibacter* HTCC1062 (SAR11). *Environ. Microbiol.* 10.1111/1462-2920.15837
167. Giovannoni, S., F. Chan, E. Davis, C. Deutsch, S. Wolf. 2021. Biochemical Barriers on the Path to Ocean Anoxia? *mBio.* [10.1128/mBio.01332-21](https://doi.org/10.1128/mBio.01332-21)
166. Noell, S.E., G.E. Barrell, C. Suffridge, J. Morré, J.R. Graff, B.J. VerWey, F.L. Hellweger, and S.J. Giovannoni. 2021. SAR11 Cells Rely on Enzyme Multifunctionality to Transport and Metabolize a Range of Polyamine Compounds. [10.1128/mBio.01091-21](https://doi.org/10.1128/mBio.01091-21)
165. Washburn Q., J.A. Wells, S.E. Noell, S. Wolf, C.P. Lee., S.G. Giovannoni C.P. Suffridge. 2021. Oligotrophic: A Marine Microbiology Board Game Based Activity for High School Science Classrooms. *The Science Teacher* 88: <https://www.nsta.org/science-teacher/science-teacher-mayjune-2021/oligotrophic>
164. Davie-Martin C.L., Giovannoni S. J., Behrenfeld M. J., Penta W. B., Halsey K. H. 2020, Seasonal and Spatial Variability in the Biogenic Production and Consumption of Volatile Organic Compounds (VOCs) by Marine Plankton in the North Atlantic Ocean. *Front. Mar. Sci.* [10.3389/fmars.2020.611870](https://doi.org/10.3389/fmars.2020.611870)
163. Bolaños, L.M., C. J. Choi, A. Z. Worden, N. Baetge, C. A. Carlson, S.J. Giovannoni. 2020. Seasonality of the microbial community composition in the North Atlantic. *Front. Mar. Sci.* [10.3389/fmars.2021.624164](https://doi.org/10.3389/fmars.2021.624164)
162. Suffridge C.P., L.M. Bolaños, K. Bergauer, A.Z. Worden, J. Morré, M.J. Behrenfeld and S.J. Giovannoni. 2020. Exploring vitamin B1 cycling and its connections to the microbial community in the north Atlantic Ocean. *Front. Mar. Sci.* [10.3389/fmars.2020.606342](https://doi.org/10.3389/fmars.2020.606342)

161. Kivenson, V. and S. J. Giovannoni. 2020. An Expanded Genetic Code Enables Trimethylamine Metabolism in Human Gut Bacteria. *mSystems* 10.1128/mSystems.00413-20
160. Choi, C. J., V. Jimenez, D. M. Needham, C. Poirier, C. Bachy, H. Alexander, S.E Wilken, F. P. Chavez, S. Sudek, S. J. Giovannoni, and A.Z. Worden. 2020. Seasonal and geographical transitions in eukaryotic phytoplankton community structure in the Atlantic and Pacific Oceans. *Frontiers in Microbiol.* 10.3389/fmicb.2020.542372
159. Liu, S R. Parsons, K. Opalk, N. Baetge, S. Giovannoni, L. Bolaños, E. Kujawinski, K. Longnecker, Y. Lu, E. Halewood, C.A. Carlson. 2020. Different carboxyl-rich alicyclic molecules proxy compounds select distinct bacterioplankton for oxidation of dissolved organic matter in the mesopelagic Sargasso Sea. *Frontiers in Microbiol.* 10.1002/fno.11405
158. Bolaños, L.M., L.Karp-Boss, C.J. Choi A. Z. Worden, J. R. Graff, N. Haëntjens, A.P. Chase, A. D. 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.* 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.* [10.1111/1462-2920.14861](https://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* 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. 10.1111/EMI.14649
153. Giovannoni S.J., K.H. Halsey, J. Saw, O. Muslin, C. Suffridge, J. Sun, C.P. Lee, E.R. Moore, B. Temperton, and S. Noell. 2019. A parasitic arsenic cycle that shuttles energy from phytoplankton to heterotrophic bacterioplankton. *mBIO* 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. 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 *Podoviridae* family integrate into host genomes. *Environ. Microbiol.* 21:1989-2001. 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. 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.* 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.* 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.* 10.1002/fno.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* 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. [10.1146/annurev-marine-010814-015934](https://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.* 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*. 10.1128/mSystems.00068-16
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