

## Samuel T. Wilson

Department of Oceanography, University of Hawaii, Honolulu, Hawaii 96822 USA

Work: 808-956-0573 · Email: [stwilson@hawaii.edu](mailto:stwilson@hawaii.edu)

British citizen, USA Green Card Holder

### EDUCATION

2003- 2007    PhD. *The production of biogenic trace gases in the marine environment*  
Scottish Association for Marine Science (SAMS), Open University

1996-1999    BSc Honours Marine Biology, Class 2.1  
Graham Ralston prize for undergraduate dissertation  
University of Wales, Swansea

### PROFESSIONAL EMPLOYMENT

2020-present    Associate Researcher, University of Hawaii

2015-2020    Assistant Researcher, University of Hawaii

2012-2015    Affiliate Researcher, University of Hawaii

2007- 2012    Postdoctoral scholar, University of Hawaii

2001-2003    Environmental Advisor, Countryside Agency, UK government

---

### PROFESSIONAL ACTIVITIES

Organizer for October 2018 OCB Workshop "*Oceanic Methane and Nitrous Oxide: The Present Situation and Future Scenarios*"

Co-chair of Scientific Committee on Oceanic Research (SCOR) Working Group 143  
"*Dissolved nitrous oxide and methane measurements: Working towards a global network of ocean time series measurements of methane and nitrous oxide*"

Project Scientist at Simons Collaboration on Ocean Processes and Ecology (SCOPE):  
Chief scientist for oceanographic expeditions and organization of multi-institute oceanographic research

Convener and guest editor for Frontiers Research Topic in Frontiers in Marine Science  
'*Microbial Ecology in the North Pacific Subtropical Gyre*'

Session chair at Aquatic Sciences (2017): '*Station ALOHA: A sentinel of open ocean change*'

Session chair at Ocean Sciences (2014): *'Station ALOHA: Celebrating 25 years of sustained ocean observations'* and *'Biogenic trace gases in the surface ocean: from source to flux'*

### Activity at the University of Hawaii

SOEST Ship Operations Committee Member, 2015-present

Committee member for University of Hawaii Review of Permit Process for the Importation of Microorganisms into the State of Hawaii, 2011-2013

Chief Scientist for NSF review of UNOLS R/V Kilo Moana, February 2013

Science judge for the Pacific Symposium for Science and Sustainability

Participant in the SOEST open house for school students

---

### RESEARCH FUNDING

*'OASIS - Oceanic nitrogen fixation across spatiotemporal scales'* Thomas Jefferson Fund, Principal Investigators: M Benavides, **S Wilson**, \$18,908 (July 2019)

*'Gross nitrogen fixation in the oligotrophic North Pacific Ocean'* National Science Foundation, Chemical Oceanography, Principal Investigator: **S Wilson**, \$246,562 (June 2018 - current)

*'Oceanic Methane and Nitrous Oxide: The Present Situation and Future Scenarios'* OCB Workshop. Principal Investigators: **S. Wilson**, B. Chang, C. Deutsch, J. Kessler, T. Treude, D. Valentine, and B. Ward, \$90,000 (October 28-31, 2018)

*'Ecosystem Dynamics Due to the Influence of Eddy Systems (EDDIES)'* Schmidt Ocean Institute. Principal Investigators: D. Karl, E. DeLong, **S. Wilson**, M. Follows, 30 days of shiptime on the Research Vessel Falkor, (March-April 2018)

*'Dissolved nitrous oxide and methane measurements: Working towards a global network of ocean time series measurements of N<sub>2</sub>O and CH<sub>4</sub>'*. Scientific Committee for Ocean Research Working Group #143. Principal Investigators: **S.T. Wilson**, H. Bange (2014-Jan 2019)

*'Hydrogen production and nitrogen fixation in the North Pacific Subtropical Gyre'*. National Science Foundation, Chemical Oceanography, Principal Investigator: D.M. Karl, \$281,421 (2012-2015)

*'Hydrogen production by marine micro-organisms'* Internal grant awarded for research at UCSC. Principal Investigator: **S Wilson** \$3,260 (May-Jun 2009)

---

## FIELDWORK

- 2007-2016 26 Hawaiian Ocean Time-series (HOT) cruises  
Measurement of trace gases (CH<sub>4</sub>, N<sub>2</sub>O, H<sub>2</sub>, CO, DMS)
- 2018 R/V Falkor. 14 days. North Pacific Ocean. S. Wilson, Chief Scientist  
R/V Ka'Imikai-O-Kanaloa. 5 days. North Pacific. S. Wilson, Chief Scientist
- 2016 R/V Kilo Moana. 5 days. North Pacific Ocean. S. Wilson, Chief Scientist
- 2015 R/V Kilo Moana. 14 days. North Pacific Ocean. S. Wilson, Chief Scientist
- 2014 R/V Kilo Moana. 13 days. North Pacific Ocean. S. Wilson, Chief Scientist
- 2013 R/V Kilo Moana. 14 days. North Pacific Ocean. K. Björkman, Chief Scientist  
R/V Kilo Moana. 1 day. North Pacific Ocean. S. Wilson, Chief Scientist
- 2012 R/V Kilo Moana. 2 x 20 days. North Pacific Ocean. S. Wilson, Chief Scientist
- 2011 R/V Kilo Moana. 11 days. North Pacific Ocean. M. Church, Chief Scientist  
R/V Kilo Moana. 16 days. North Pacific Ocean. J. Robidart, Chief Scientist
- 2010 R/V Kilo Moana. 10 days. North Pacific Ocean. M. Church, Chief Scientist  
R/V Ka'Imikai-O-Kanaloa. 5 days. North Pacific. S. Wilson, Chief Scientist
- 2008 R/V Kilo Moana. 5 days. North Pacific Ocean. E. Grabowski, Chief Scientist  
Deployment of a wave driven ocean upwelling pump in the North Pacific  
R/V Kilo Moana. 14 days. North Pacific Ocean. Z. Kolber, Chief Scientist  
Measurement of trace gases associated with phytoplankton blooms
- 2007 R/V Kilo Moana. 14 days. North Pacific Ocean. R. Letelier, Chief Scientist  
Measurement of trace gases associated with phytoplankton blooms
- 2005-06 Coastal fieldwork in Loch Linhe, west coast of Scotland R/V Seol Mara  
Investigating trace gas dynamics associated with sedimenting material
- 

## TEACHING

- Guest Lecturer for the following classes taught at the University of Hawaii
- |   |                                |
|---|--------------------------------|
| OCN 201: Science of the Sea                     | (Kapi'olani Community College) |
| OCN 621: Biological Oceanography                | (University of Hawaii)         |
| OCN 626: Marine Microplankton Ecology           | (University of Hawaii)         |
| OCN 633: Biogeochemical Methods in Oceanography | (University of Hawaii)         |
- 

## PUBLICATIONS

- Dugenne, M., F. Henderikx-Freitas, **S.T. Wilson**, D.M. Karl, and A.E. White (2020) Life and death of *Crocospaera watsonii* in the Pacific Ocean: Fine scale resolution of predator-prey dynamics. *Limnol. Oceanogr.* doi: 10.1002/lno.11473.
- Hawco, N.J., Y. Shun-Chung, R.K. Foreman, C.P. Funkey, M. Dugenne, A.E. White, **S.T. Wilson**, R.L. Kelly, X. Bian, K.-F. Huang, D.M. Karl, and S.G. John (2020) Metal isotope signatures from lava-seawater interaction during the 2018 eruption of Kīlauea. *Geochim. Cosmochim. Acta* 282, 340-356.

Klawonn, I., M.J. Eichner, **S.T. Wilson**, N. Moradi, B. Thamdrup, S. Kümmel, M. Gehre, A. Khalili, H.P. Grossart, D.M. Karl and H. Ploug (2020) Distinct nitrogen cycling and steep chemical gradients in *Trichodesmium* colonies. *ISME J.* 44, 319-412.

Mills, M.M., K.A. Turk-Kubo, G.L. van Dijken, B.A. Henke, K. Harding, **S.T. Wilson**, K.R. Arrigo, and J.P. Zehr (2020) Unusual marine cyanobacteria/haptophyte symbiosis relies on N<sub>2</sub> fixation even in N-rich environments. *ISME J.* doi: 10.1038/s41396-020-0691-6.

Muratore, D., A.K. Boysen, M.J. Harke, K.W. Becker, J.R. Casey, S.N. Coesel, D.R. Mende, **S.T. Wilson**, F.O. Aylward, J. Eppley, A. Visolova, S. Peng, R. Rodriguez, S.J. Beckett, E. V. Armbrust, E.F. DeLong, D.M. Karl, A.E. White, J.P. Zehr, A.E. Ingalls, B.A.S. Van Mooy, S.T. Dyhrman, A.E. Ingalls, and J.S. Weitz (2020) Community-scale synchronization and temporal partitioning of gene expression, metabolism and lipid biosynthesis in the oligotrophic ocean. *bioRxiv* doi: <https://doi.org/10.1101/2020.05.15.098020>.

Sosa, O.A., T.J. Burrell, **S.T. Wilson**, R.K. Foreman, D.M. Karl, and D.J. Repeta (2020) Phosphonate cycling supports methane and ethylene production and supersaturation in the phosphate-depleted western North Atlantic Ocean. *Limnol. Oceanogr.* doi: 10.1002/lno.11463.

White, A.E., J. Granger, C. Selden, M.R. Gradoville, L. Potts, A. Bourbonnais, R.W. Fulweiler, A.N. Knapp, W. Mohr, P. Moisaner, C.R. Tobias, M. Caffin, **S.T. Wilson**, M. Benavides, S. Bonnet, M. Mulholland, and B.X. Chang (2020) A review of the 15N<sub>2</sub> tracer method to measure diazotrophic production in pelagic ecosystems. *Limnol. Oceanogr. Methods.* 18, 129-147.

**Wilson, S.T.**, M. Caffin, A.E. White, and D.M. Karl (2020) Evaluation of argon induced hydrogen production as a method to measure nitrogen fixation. *J. Phycol.* *In review*

**Wilson, S.T.**, A.N. Al-Haj, A. Bourbonnais, C. Frey, R.W. Fulweiler, J.D. Kessler, H.K. Marchant, J. Milucka, N.E. Ray, P. Suntharalingham, B.F. Thornton, R.C. Upstill-Goddard, T.S. Weber, D.L. Arévalo-Martínez, H.W. Bange, H.M. Benway, D. Bianchi, A.V. Borges, B.X. Chang, P.M. Crill, D.A. del Valle, L. Farías, A. Kock, S.B. Joye, J. Labidi, C.C. Manning, J.W. Pohlman, G. Rehder, K.J. Sparrow, P.D. Tortell, T. Treude, D.L. Valentine, B.B. Ward, S. Yang, and L.N. Yurganov (2020) Ideas and perspectives: A strategic assessment of methane and nitrous oxide measurements in the marine environment, *Biogeosciences Discuss.*, <https://doi.org/10.5194/bg-2020-270>, *In review*

Yang, S., B.X. Chang, M. Warner, T.S. Weber, A. Bourbonnais, A.E. Santoro, A. Kock, R. Sonnerup, J. Bullister, **S.T. Wilson**, and D. Bianchi (2020) Global reconstruction reduces the uncertainty of oceanic nitrous oxide emissions and reveals a vigorous seasonal cycle. *Proc. Nat. Acad. Sci. USA* 117, 11954-11960.

Zhang, Y. J.P. Ryan, B.W. Hobson, B. Kieft, A. Romano, B. Barone, C.M. Preston, B. Roman, B.-Y. Raanan, D. Pargett, M. Dugenne, A.E. White, S. Poulos, **S.T. Wilson**, E.F. DeLong, D.M. Karl, J.M. Birch, J.G. Bellingham, and C.A. Scholin (2020) A system of

coordinated autonomous robots for a lagrangian study of microbial communities in an open-ocean deep chlorophyll maximum. *Science Robotics* *In review*

Bange, H.W., D.L. Arévalo-Martínez, M. de la Paz, L. Farías, J. Kaiser, A. Kock, C.S. Law, A.P. Rees, G. Rehder, P. Tortell, R.C. Upstill-Goddard, and **S.T. Wilson** (2019) A harmonized nitrous oxide ocean observation network for the 21st century. *Front. Mar. Sci.* 6, 157. doi: 10.3389/fmars.2019.00157

Inomura, K., **S.T. Wilson** and C. Deutsch (2019) A mechanistic physiological model for the co-occurrence of nitrogen fixation and photosynthesis in marine *Trichodesmium*. *mSystems* 4:e00210-19.

Inomura, K., C. Deutsch, **S.T. Wilson**, T. Masuda, E. Lawrenz, B. Lenka, R. Sobotka, J.M. Gauglitz, M.A. Saito, O. Prášil, and M.J. Follows (2019) Quantifying oxygen management and temperature and light dependencies of nitrogen fixation by *Crocospaera watsonii*. *mSphere* 4:e00531-19.

Robidart J.C., J.D. Magasin, I.N. Shilova, K.A. Turk-Kubo, **S.T. Wilson**, D.M. Karl, C.A. Scholin, and J.P. Zehr (2019) Effects of nutrient enrichment and deep water mixing on surface microbial community gene expression in the oligotrophic North Pacific Ocean. *ISME J.* 13, 374-387.

**Wilson, S.T.\***, N.J. Hawco\*, E.V. Armbrust, B. Barone, K.M. Björkman, A.K. Boysen, M. Burgos, T.J. Burrell, J.R. Casey, E.F. DeLong, M. Dugenne, S. Dutkiewicz, S.T. Dyhrman, S. Ferrón, M.J. Follows, R.K. Foreman, C.P. Funkey, M.J. Harke, B.A. Henke, C.N. Hill, A.M. Hynes, A.E. Ingalls, O. Jahn, R.L. Kelly, A.N. Knapp, R.M. Letelier, F. Ribalet, E.M. Shimabukuro, R.K.S. Tabata, K.A. Turk-Kubo, A.E. White, J.P. Zehr, S. John, and D.M. Karl (2019) Kīlauea lava fuels phytoplankton bloom in the North Pacific Ocean. *Science* 365, 1040-1044. (\*co-lead authors)

Zhang, Y., B. Kieft, B. Hobson, J. Ryan, B. Barone, C. Preston, B. Roman, B.-Y. Raanan, R. Marin III, T. O'Reilly, C. Rueda, D. Pargett, K. Yamahara, S. Poulos, A. Romano, G. Foreman, H. Ramm, **S. Wilson**, E. DeLong, D. Karl, J. Birch, J. Bellingham, and C. Scholin (2019) Autonomous tracking and sampling of the deep chlorophyll maximum in an open-ocean eddy by a Long Range Autonomous Underwater Vehicle. *IEEE Journal of Oceanic Engineering* doi: 10.1109/JOE.2019.2920217.

Follett, C.L., A.E. White, **S.T. Wilson** and M.J. Follows (2018) Nitrogen fixation rates diagnosed from diurnal changes in elemental stoichiometry. *Limnol. Oceanogr.* 63, 1911-1923.

Hynson, N.A., K.L. Frank, R.A. Alegado, A.S. Amend, M. Arif, G.M. Bennett, A.J. Jani, M.C.I. Medeiros, Y. Mileyko, C.E. Nelson, N.H. Nguyen, O. Nigro, S. Priscic, S. Shin, D. Takagi, **S.T. Wilson**, and J.Y. Yew (2018) Synergy among microbiota and their hosts: leveraging the Hawaiian archipelago and local collaborative networks to address pressing questions in microbiome research. *mSystems* 3:e00159-17.

Martínez-García, S., R.R. Bidigare, D.A. del Valle, L.W. Juranek, D.P. Nicholson, D.A. Viviani, **S.T. Wilson** and M.J. Church (2018) Control of net community production by microbial community respiration at Station ALOHA. *J. Mar. Systems* 184, 28-35.

Royer, S.-J., S. Ferrón, **S.T. Wilson** and D.M. Karl (2018) Production of methane and ethylene from plastic in the environment. *PLoS ONE* 13(8): e0200574.

Thompson, A.W., G. Engh, N. Ahlgren, K. Kouba, S. Ward, **S.T. Wilson** and D.M. Karl (2018) Dynamics of *Prochlorococcus* diversity and photoacclimation during short-term shifts in water column stratification at Station ALOHA. *Front. Mar. Sci.* 5:488. doi: 10.3389/fmars.2018.00488

**Wilson, S.T.**, H.W. Bange, J. Barnes, A. Borges, I. Brown, J. Bullister, M. Burgos, D.W. Capelle, M. Casso, M. de la Paz, L. Farías, L. Fenwick, S. Ferrón, G. Garcia, M. Glockzin, D.M. Karl, A. Kock, S. Laperriere., C.S. Law, C.C. Manning, A. Marriner, J.-P. Myllykangas, J.W. Pohlman, A.P. Rees, A. Santoro, P. Tortell, D. Wisegarver, R.C. Upstill-Goddard, G.L. Zhang, G. Rehder (2018) An intercomparison of oceanic methane and nitrous oxide measurements. *Biogeosciences* 15, 5891-5907.

**Wilson, S.T.** and M.J. Church (2018) Microbial ecology in the North Pacific Subtropical Gyre. *Front. Mar. Sci.* 5:334.

Böttjer, D., J.E. Dore, D.M. Karl, R.M. Letelier, C. Mahaffey, **S.T. Wilson**, J.P. Zehr and M.J. Church (2017) Temporal variability in dinitrogen fixation and particulate nitrogen export at Station ALOHA. *Limnol. Oceanogr.* 62: 200-216.

Eichner, M.J., I. Klawonn, **S.T. Wilson**, S. Littmann, M. Whitehouse, M.J. Church, M.M.M. Kuypers, D.M. Karl and H. Ploug (2017) Chemical microenvironments and single-cell carbon and nitrogen uptake in colonies of *Trichodesmium* under different pCO<sub>2</sub>. *ISME J.* 11: 1305-1317.

Engel, A., H. Wagner, F.A.C. Le Moigne and **S.T. Wilson** (2017) Particle export fluxes to the oxygen minimum zone of the Eastern Tropical North Atlantic. *Biogeosciences.* 14: 1825-1838.

**Wilson, S.T.\***, F. Aylward\*, F. Ribalet, B. Barone, J.R. Casey, P. Connell, J.A. Eppley, S. Ferrón, J.N. Fitzsimmons, C.T. Hayes, A.E. Romano, K.A. Turk-Kubo, A. Vislova, E.V. Armbrust, D.A. Caron, M.J. Church, J.P. Zehr, D.M. Karl and E.F. DeLong, (2017) Coordinated regulation of growth, activity and transcription in natural populations of the unicellular nitrogen-fixing cyanobacterium *Crocospaera*. *Nature Microbiol.* 2. 17118. (\*co-lead authors)

**Wilson, S.T.**, S. Ferrón and D.M. Karl (2017) Interannual variability of methane and nitrous oxide in the North Pacific Subtropical Gyre. *Geophys. Res. Letts.* 44: doi: 10.1002/2017GL074458.

Rouco, M., S.T. Haley, H. Alexander, **S.T. Wilson**, D.M. Karl, S.T. Dyhrman (2016) Variable depth distribution of *Trichodesmium* clades in the North Pacific Ocean. *Env. Micro. Reports* 8: 1058-1066.

Alexander, H., M. Rouco, S.T. Haley, **S.T. Wilson**, D.M. Karl, S.T. Dyhrman (2015) Functional group-specific traits drive phytoplankton dynamics in the oligotrophic ocean. *Proc. Nat. Acad. Sci. USA*. 112: 5972-5979.

Bombar, D., C.Taylor, **S.T. Wilson**, J. Robidart, A. Rabines, K. Turk-Kubo, J.N. Kemp, D.M. Karl, J.P. Zehr (2015) Measurements of nitrogen fixation in the oligotrophic North Pacific Subtropical Gyre using a free-drifting Submersible Incubation Device. *J. Plankton Res.* 37:727-739.

Braun, A., F. Boudoire, D.K. Bora, G. Faccio, Y. Hu, A. Kroll, B.S. Mun, **S.T. Wilson** (2015) Biological components and bioelectronic interfaces of water splitting photoelectrodes for solar hydrogen production. *Chem. Eur. J.* 21: 4188-4199.

Ferrón, S., **S.T. Wilson**, S. Martínez-García, P.D. Quay, D.M. Karl (2015) Metabolic balance in the mixed layer of the oligotrophic North Pacific Ocean from diel changes O<sub>2</sub>/Ar saturation ratios. *Geophys. Res. Lett.* 42: doi:10.1002/2015GL063555.

Nicholson, D., **S.T. Wilson**, S.C. Doney, D.M. Karl (2015) Quantifying subtropical North Pacific gyre mixed layer primary production from Seaglider observations of diel oxygen cycles. *Geophys. Res. Lett.* 42: doi:10.1002/2015GL063065.

**Wilson, S.T.**, B. Barone, F. Ascani, R.R. Bidigare, M.J. Church, D.A. del Valle, S. T. Dyhrman, S. Ferrón, J.N. Fitzsimmons, L.W. Juranek, Z.S. Kolber, R. M. Letelier, S. Martínez-García, D. Nicholson, K. J. Richards, Y.M. Rii, M. Rouco, D.A. Viviani, A.E. White, J.P. Zehr, D.M. Karl (2015) Short-term variability in euphotic zone biogeochemistry and primary productivity at Station ALOHA: A case study of summer 2012. *Global Biogeochem. Cycles*. 29, doi:10.1002/2015GB005141.

Bidigare, R.R., F.A. Buttler, S.J. Christensen, B. Barone, D.M. Karl and **S.T. Wilson** (2014) Evaluation of the utility of xanthophyll cycle pigment dynamics for assessing upper ocean mixing processes at Station ALOHA. *J. Plankton Res.* 36: 1423-1433.

Lin, H.-T., J.P. Cowen, E.J. Olson, M.D. Lilley, S.P. Jungbluth, **S.T. Wilson**, M.S. Rappé (2014) Dissolved hydrogen and methane in the oceanic basaltic biosphere. *Earth Planet. Sci. Lett.* 405: 62-73.

Robidart, J.C., M.J. Church, J.P. Ryan, F. Ascani, **S.T. Wilson**, D. Bombar, R. Marin III, K.J. Richards, D.M. Karl, C.A. Scholin and J.P. Zehr (2014) Ecogenomic sensor reveals controls on N<sub>2</sub>-fixing microorganisms in the North Pacific Ocean. *ISME J.* 8: 1-11.

**Wilson, S.T.**, D.A. del Valle, M. Segura-Noguera and D.M. Karl (2014) A role for nitrite in the production of nitrous oxide in the oligotrophic North Pacific Ocean. *Deep Sea Res. Part I.* 85: 47-55.

- Martinez, A., L.A. Ventouras, **S.T. Wilson**, D.M. Karl and E.F. DeLong (2013) Methylphosphonate utilization by marine bacteria. *Front. Microbiol.* 4: 340. doi: 10.3389/fmicb.2013.00340
- Wilson, S.T.**, D.A. del Valle, J.C. Robidart, J.P. Zehr and D.M. Karl (2013) Dissolved hydrogen and nitrogen fixation in the oligotrophic North Pacific Subtropical Gyre. *Environ. Microbiol. Reports* 5: 622-777.
- Wilson, S.T.**, and D.M. Karl (2013) A high-resolution insight into microbial biogeochemistry in the North Pacific Ocean. *Current - the Journal of Marine Education.* 28: 20-21.
- Blomquist, B.W., C.W. Fairall, B.J. Huebert and **S.T. Wilson** (2012) Direct measurement of the oceanic carbon monoxide flux by eddy correlation. *Atmos. Meas. Tech. Discuss.* 5: 4809-4825.
- Ditchfield A.K., **S.T. Wilson**, M.C. Hart, K.J. Purdy, D.H. Green and A.D. Hatton (2012) Identification of putative methylotrophic and hydrogenotrophic methanogens within sedimenting material and copepod faecal pellets. *Aquat. Microb. Ecol.* 67: 151-160.
- Wilson, S.T.**, D. Böttjer, M.J. Church and D.M. Karl (2012) Comparative assessment of nitrogen fixation methodologies conducted in the oligotrophic North Pacific Ocean. *Appl. Environ. Microbiol.* 78: 6491-6498.
- Wilson, S.T.**, Z.S. Kolber, S. Tozzi, J.P. Zehr and D.M. Karl (2012) Nitrogen fixation, hydrogen production and electron transport kinetics in *Trichodesmium erythraeum* Strain IMS101. *J. Phycol.* 48: 595-506.
- Varaljay, V.A., S.M. Gifford, **S.T. Wilson**, S. Sharma, D.M. Karl and M.A Moran (2012) Bacterial dimethylsulfoniopropionate-degrading genes in the oligotrophic North Pacific Subtropical Gyre. *Appl. Environ. Microbiol.* 78: 2775-2782.
- Wilson, S.T.**, S. Tozzi, R.A. Foster, I. Ilikchyan, Z.S. Kolber, J.P. Zehr and D.M. Karl (2010) Hydrogen cycling by the unicellular marine diazotroph *Crocospaera watsonii* Strain WH8501. *Appl. Environ. Microbiol.* 20: 6797-6803.
- Wilson, S.T.**, R.A. Foster, J.P. Zehr and D.M. Karl (2010) Hydrogen production by *Trichodesmium erythraeum*, *Cyanothece* spp., and *Crocospaera watsonii*. *Aquat. Microb. Ecol.* 59: 197-206.
- Kamenos, N.A., S.C. Strong, D. Shenoy, **S.T. Wilson**, A.D. Hatton and P.G. Moore (2008) Red coralline algae as a source of marine biogenic dimethylsulphoniopropionate. *Mar. Ecol. Prog. Ser.* 372: 61-66.



Hatton, A.D. and **S.T. Wilson** (2007) Particulate dimethylsulphoxide and dimethylsulphonio-propionate in phytoplankton cultures and Scottish coastal waters. *Aquatic Sciences* 69: 330-340.

#### Technical Reports, Conference Proceedings, and Other Literature

Birch, J., B. Barone, E. DeLong, G. Foreman, K. Gomes, B. Hobson, S Jensen, D Karl, B Kieft, R Marin, T O'Reilly, D Pargett, S Poulos, C Preston, H Ramm, B Roman, A Romano, J Ryan, C Scholin, W Ussler, **S Wilson**, K Yamahara, Y Zhang (2018) Autonomous targeted sampling of the deep chlorophyll maximum layer in a subtropical North Pacific eddy. In OCEANS 2018 MTS/IEEE Charleston, 1-5.

Fassbender, A.J., and 73 others (2017) Perspectives on Chemical Oceanography in a changing environment: Participants of the COME ABOARD Meeting examine the field in the context of 40 years of DISCO. *Mar. Chem.* 196: 181-190.

Bullister, J.L., D.P. Wisegarver and **S.T. Wilson** (2016) Technical Report: The production of methane and nitrous oxide gas standards for Scientific Committee on Ocean Research (SCOR) Working Group #143. pp 1-9.

---

#### CONFERENCE PRESENTATIONS (only presentations by S.T. Wilson are shown)

2020. *Introducing the argon-hydrogen method to measure biological nitrogen fixation.* Ocean Sciences Meeting, San Diego. Oral Presentation

2019. *Lava meets Ocean.* Oceanology International: Catch the Next Wave, San Diego. Oral Presentation

2018. *A global inter-comparison of oceanic methane and nitrous oxide measurements.* Ocean Sciences, Portland. Poster presentation.

2017. *Interannual variability of methane and nitrous oxide in the North Pacific Subtropical Gyre.* *Aquatic Sciences*, Honolulu. Poster presentation

2015. *Dissolved N<sub>2</sub>O and CH<sub>4</sub> measurements: Working towards a global network of ocean time series measurements of N<sub>2</sub>O and CH<sub>4</sub>.* SOLAS Conference, Kiel, Poster presentation.

2014. *Nitrification-denitrification as a source of nitrous oxide in the lower euphotic zone of the oligotrophic North Pacific Subtropical Gyre.* Ocean Sciences, Honolulu. Poster presentation.

2013. *Time-series measurements of nitrous oxide and methane in the oligotrophic North Pacific Subtropical Gyre.* Workshop on the 'Microbial ecology and biogeochemistry of

oxygen-deficient marine waters' sponsored by the Agouron Institute and the Gordon and Betty Moore Foundation. Santa Cruz, Chile. Poster presentation.

2012. *Nitrogen fixation methods in the oligotrophic North Pacific subtropical gyre*. Nitrogen fixation workshop sponsored by SOLAS. Kiel, Germany. Oral presentation

2011. *Hydrogen production associated with nitrogen fixation: from the laboratory to the open ocean*. Oceanography Department Seminar, University of Hawaii.

2006. *Methanogens in the Upper Ocean*. Challenger Conference for Marine Science, Scotland Oral presentation

2006. *The production of DMSP and DMSO by marine phytoplankton*. 4<sup>th</sup> International Symposium on Biological and Environmental Chemistry of DMS(P) and Related Compounds Oral presentation

---

#### REVIEWER (numbers shown for 2016-2019)

Manuscript reviewer for Atmosphere (2), Biogeosciences (7), Environmental Research Letters (1), Geophysical Research Letters (2), Journal of Geophysical Research – Oceans (4), Global Biogeochemical Cycles (1), International Society of Microbial Ecology Journal (1), Journal of Oceanography (1), Limnology and Oceanography (3), Limnology and Oceanography Methods (1), Limnology and Oceanography Letters (1), Marine Chemistry (3), Marine Pollution Bulletin (1), Proceedings National Academy of Science USA (1)

Proposal reviewer for: US National Science Foundation, German government (Deutsche ForschungsgemeinschaftG), Chilean government (Conicyt Comisión Nacional de Investigación Científica y Tecnológica), UK government (Natural Environment Research Council), French government (Centre for the Synthesis and analysis of biodiversity).

---

#### PROFESSIONAL REFERENCES

##### **Professor David Karl**

Director, Center for Microbial Oceanography Research and Education  
Co-director, Simons Collaboration on Ocean Processes and Ecology (SCOPE)  
University of Hawaii, 1950 East-West Road, Honolulu, Hawaii 96822  
Email: dkarl@hawaii.edu  
Phone: 808-956-8964