



Dr Jillian M. Petersen

Professor

Editor-in-Chief, The ISME Journal

Vice Director of Studies, Molecular Biology

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Main Research Areas

- Microbial symbioses
- Ecology, evolution, and development of host-microbe interactions
- Plant-microbe associations from seagrass meadows to saltmarshes and agriculture
- Genomic and molecular basis of host-microbe interactions
- *In situ* imaging of microbial identity and activity

Career

2025 – current	Full Professor, Centre for Microbiology and Environmental Systems Science, University of Vienna
2020 – 2025	Associate Professor, Centre for Microbiology and Environmental Systems Science, University of Vienna
2016 – 2020	Assistant Professor (tenure-track), Division of Microbial Ecology, University of Vienna
2015 – 2023	Head of WWTF Vienna Research Group for Young Investigators
2013 – 2015	Senior scientist, Symbiosis Department, Max Planck Institute for Marine Microbiology
2013	Maternity leave
2009 – 2013	Postdoctoral researcher, Symbiosis Group, Max Planck Institute for Marine Microbiology
2010 – 2011	Maternity leave
2003 – 2004	Undergraduate scientist, Advanced Wastewater Management Center, University of Queensland, Australia

Education

2009	Dr. rer. nat. University of Bremen and Max Planck Institute for Marine Microbiology, Bremen, Germany <i>Thesis title:</i> "Diversity and Ecology of Chemosynthetic Symbioses in Deep-Sea Invertebrates"
2006	Master of Science in Marine Microbiology, International Max Planck Research School of Marine Microbiology, Bremen, Germany Grade A (excellent)
2004	Bachelor of Science in microbiology, University of Queensland, Brisbane, Australia Grade point average 6.22 out of a possible 7.0 (6.0 = distinction)

Awards and Fellowships

2023	ERC Consolidator Grant
2019	Elected to the International Board of the International Society for Microbial Ecology (ISME)
2019	Elected to the Young Academy of the Austrian Academy of Sciences
2019	City of Vienna Award for Natural Sciences
2018	ERC Starting Grant
2015	Fellowship of the Robert Bosch Foundation's 'Fast Track' program for outstanding women in science
2014	Vienna Research Group for Young Investigators, a start-up award from the Vienna Science and Technology Fund
2013	ASLO Raymond L. Lindeman Award for an outstanding paper written by a young aquatic scientist
2011	Wolf Vishniac Award for Young Investigators from the International Society for Environmental Biogeochemistry
2007	Interridge Outstanding Student Paper Award, Interridge Theoretical Institute: Biogeochemical Interaction at Deep-Sea Vents, Woods Hole Oceanographic Institution, USA
	Poster Prize, Gordon Research Conference Applied and Environmental Microbiology, Mount Holyoke, USA

Research Grants

2023	ERC Consolidator Grant (€ 1,999,496)
2023	Austrian Science Fund 'Cluster of Excellence' (PI on projects for total € 741,025)
2022	MCSA Postdoctoral Fellowship to Christina Straub (€ 261,167), with bonus 3 rd year scholarship to CS for being among the top 5 proposals at the University of Vienna
2022	BIOcean-5D (Horizon Europe Research and Innovation Action; PI on € 200,000 sub-project)
2022	Austrian Academy of Sciences kick-off project funding (€ 8,000)
2019	Austrian Science Fund (FWF) doc.funds doctoral school on Symbiosis (co-coordinator, total volume € 1,902,623)
2018	ERC Starting Grant (€ 1,499,561)
2017	Individual PhD fellowship for Sarah Zauner from the Austrian Academy of Sciences (€ 126,000)
2016	Individual postdoc funding for Nathalie Elisabeth from the Region Guadeloupe (€ 55,000)
2015	Bosch Foundation Fellowship (€ 15,000)
2014	Vienna Science and Technology Fund (WWTF) 'Vienna Research Group' funding for an independent research group at the University of Vienna (€ 1,600,000)
2012	Individual doctoral thesis funding for Lizbeth Sayavedra from the German Academic Exchange Service (DAAD) (€ 48,000)

Selected Presentations

Upcoming	ISME-Asia Forum, Hangzhou, China Keynote speaker
2025	Austrian Academy of Sciences Event for International Women's Day Invited speaker
2024	Symbiosis in Context Workshop Invited speaker
2024	Third-phase kick-off symposium, DFG Collaborative Research Centre on Metaorganisms, Kiel, Germany

2023	Keynote speaker
	Second South Asian Symposium on Microbial Ecology, Kathmandu, Nepal
	Plenary speaker
	Conference of the International Center for Deep Life Investigation (IC-DLI), China
	Plenary speaker
	Gordon Research Conference Applied and Environmental Microbiology, USA
2022	Session chair
	Gordon Research Seminar Applied and Environmental Microbiology, USA
	Plenary speaker
	Federation of European Microbiological Societies Meeting 2023, Germany
	Session chair and invited speaker
	EMBO/EMBL Symposium The Cellular Mechanics of Symbiosis
2021	Invited speaker
	International Symbiosis Society Meeting, Lyon, France
	Plenary speaker
	ISME-18, Lausanne, Switzerland
	Session chair and invited speaker
	13 th Annual Meeting of the Austrian Society for Molecular Bioscience and Biotechnology
2020	Invited speaker
	ALSO Aquatic Sciences Meeting
	Invited speaker
	Southern Denmark University Biology Faculty Seminar Series
	Invited speaker
	EMBL Planetary Biology Lecture Series
2019	Invited speaker
	12 th Annual Meeting of the Austrian Society for Molecular Bioscience and Biotechnology
	Keynote speaker
	21 st International Congress on Nitrogen Fixation, Wuhan, China
	Plenary speaker
	Gordon Research Conference Applied and Environmental Microbiology, South Hadley, USA
2018	Invited speaker
	Gordon Research Conference Animal-Microbe Symbioses, Mount Snow, USA
	Invited speaker
	Vienna Graduate School of Population Genetics
	Invited seminar speaker
	MIMAS-II Symposium on Microbial Interactions in Marine Systems, Greifswald Germany
2017	Invited speaker
	Gordon Research Conference Microbial C1 Metabolism, USA –
	Invited speaker
	Dutch Microbiology Society (KNVM) Spring Meeting, Arnhem –
	Invited speaker
	Department of Ecology and Evolution, University of Salzburg, Austria
2016	Invited speaker
	3 rd Institute of Oceanography, Xiamen, China
	Invited speaker
	International CRC Workshop ‘Survival Artists’, Marburg Germany
	Keynote speaker
	Society for Aquatic Microbial Ecology (SAME), Zagreb Croatia
2015	Keynote speaker
	Keynote speaker

	6th International Symposium on Chemosynthesis-Based Ecosystems, Woods Hole USA Keynote speaker Annual Conference of the German Association for General and Applied Microbiology, Würzburg Germany Invited speaker Annual Meeting of the Society for Integrative and Comparative Biology (SICB), New Orleans USA Invited speaker
2016	ISME Meeting, Montreal Canada Session coordinator and speaker ASM Microbe, Boston USA Invited speaker Invited seminar at the Department of Microbiology, Radboud University, Nijmegen The Netherlands
2015	EMBO Workshop on Microbial Sulfur Metabolism, Helsingor Denmark Invited speaker International Symbiosis Society Meeting, Lisbon Portugal Invited speaker
2014	Vienna Biocenter PhD Symposium, Austria Invited speaker Lyell Meeting of the Geological Society of London, England Invited speaker
2013	Aquatic Sciences Meeting of the Association for the Sciences of Limnology and Oceanography, New Orleans USA Acceptance speech for the Lindeman award during plenary session
2012	Canadian Institute for Advanced Research, Integrated Microbial Diversity program annual meeting, Quebec City Canada Invited speaker
2011	20 th International Society for Environmental Biogeochemistry Meeting, Istanbul Turkey Invited speaker
2009	American Society for Microbiology (ASM) General Meeting, Philadelphia USA Invited speaker

Supervision and Mentoring

Current:

Christina Straub (Postdoc; own funding Marie Skłodowska-Curie Actions)
 Marie-Therese Fischer (Postdoc; own funding FWF Schrödinger return phase)
 Katherine Emelianova (Postdoc)
 Cristina Alcaraz (Postdoc)
 Sophia Ferchiou (Postdoc)
 Lukas Leibrecht (MSc, PhD)
 Alejandro Llanos Lizcano (MSc, PhD; own funding ÖAW DOC stipend)
 Saeed Joshi (PhD; joint supervision with Angela Sessitsch, AIT)
 Christopher Pree (PhD)
 Tobias Leberfinger (MSc)
 Lisa Wybranitz (MSc)
 Alexandra Daskocilova (MSc)

Past (with current affiliation for PhD students and Postdocs I mentored if they have followed scientific/academic careers):

Sarah Zauner (PhD)
 Cristina Alcaraz (PhD, now Postdoc in my group)
 Marta Sudo (PhD, now Postdoc at the University of Aarhus)
 Jay Osvatic (PhD, now Senior Scientist at the University of Vienna)
 Benedict Yuen (Postdoc, now Environmental Scientist for the Govt of Singapore)
 Margaret Vogel (Postdoc, now Postdoc at the University of Lausanne)
 Julia Polzin (Postdoc, now responsible for Regulatory Compliance, ViennaLab Diagnostics)
 Ulisse Cardini (Postdoc, now tenured Group Leader at Zoological Station Naples)
 Nathalie Elisabeth (Postdoc, now Project Scientist at UC Santa Barbara)
 Luciana Raggi (PhD, now Researcher at Universidad Michoacana de San Nicolás de Hidalgo, Mexico)
 Judith Zimmermann (PhD, now Microbiology Laboratory Manager, BASF Ludwigshafen)
 Lizbeth Sayavedra (PhD, now Postdoc at the Quadram Institute, Norwich)
 Adrien Assié (PhD, now Postdoc at Baylor College of Medicine, Houston)
 Rebecca Ansorge (PhD)
 Judith Zimmermann (MSc)
 Lizbeth Sayavedra (MSc)
 Laura Gallego Valle (MSc)
 Anna Kemper (MSc)
 Miguel Angel Gonzales Porras (MSc)
 Bertram Hausl (MSc)
 Nora Grossschmidt (MSc)
 Anastasia Svavilnaya (MSc)
 Nataliia Solncteva (MSc)
 Jennifer Windisch (MSc)
 Fragkiskos Machairas (MSc)
 Estelle Knecht (MSc)
 Stefan Eckensperger (MSc)
 Philipp Schmelz (MSc)
 Carina Gratz (MSc)
 Carmen Fontanes (MSc)

Teaching and Outreach

- 2025 – current: Vice Study Program Director in the area molecular biology, University of Vienna, responsible for the master's curriculum microbiome science
- 2015 – current: Teaching in seminars, lectures and practical courses at the bachelor's (German) and master's (English) level, University of Vienna (course catalog: <https://ufind.univie.ac.at/de/person.html?id=58749>)
- 2015 – current: Faculty member in the Vienna Doctoral Schools 'Molecules of Life' and 'Microbiology and Environmental Systems Science'
- Developed an exhibit for the Vienna 'Long Night of Research' on microbial symbioses, 2024
- Keynote speaker at Darwin Day 2018, a public outreach event for approx. 1000 high school students from northern Germany, organized by the University of Kiel Zoological Museum
- Keynote speaker and discussion panel member, public outreach event 'Microbiome and Environment' at the Natural History Museum of Vienna, 2018
- January 2012 – August 2015, faculty member of the International Max Planck Research School for Marine Microbiology (MarMic)
 - 2013 and 2014, Lecturer for the Module 'Symbiosis' in the MarMic school
- Featured in several newspaper articles in Standard, Presse, Kronen Zeitung, Wiener Zeitung, Austrian national news

Professional services

- Member of the Board (Kuratorium), Austrian Science Fund (FWF; 2021 – current)
- Member, International Board International Society for Microbial Ecology (ISME)
- Inaugural Chair of the ISME Early Career Scientist Committee
- Organizing Committee of ISME Virtual Summit #UnityInDiversity (<https://www.isme-microbes.org/unity-diversity>)
- Co-chair of the working group ‘Symbiotic Interactions’ of the German Society for General and Applied Microbiology (2020 – 2025)
- Chair, International Workshop on Microbial Sulfur Metabolism (WMSM), Vienna 2018
- Co-organizer of Satellite Meeting “Chemotrophic symbiosis in the genomic era” for the 8th International Symbiosis Society Meeting, 2015
- Editor-in-chief, The ISME Journal (since 2021)
- Editor, mSystems, an American Society for Microbiology Journal (2015 – 2021)
- Editor, Biological Bulletin (2014 – 2021)
- Peer-review for Science, Current Biology, PNAS, Nature Microbiology, ISME Journal, Molecular Ecology, Environmental Microbiology, Microbiome, PLoS One, Current Microbiology, Genome Biology and Evolution, Biological Bulletin, Symbiosis, Biogeosciences Discussions, and others
- Proposal reviews for the Schmidt Ocean Institute, French National Research Council (ANR), National Science Foundation (NSF), German Research Foundation (DFG)
- Panel member, Portuguese Science and Technology Fund (FCT)
- Review panel member, Schmidt Ocean Institute
- Member of the ‘Gutachter Panel Forschungsschiffe’ a joint panel of the German Research Foundation, Ministry of Science and Education, and Helmholtz Association responsible for reviewing applications for German research vessels (2018 – 2025)
- Member of the selection committees (L’Oreal Fellowship, DOC, Austrian Academy of Sciences)
- Member of the MPI Bremen Employees Council from 2006 – 2010

Publications

Author on 41 papers in peer-reviewed journals (including papers as first or last author in e.g., Nature, Nature Microbiology, eLife, PNAS). Published papers have received 2201 citations; H-index 26 (Google Scholar).

*Corresponding author

§Equal contribution

Manuscripts submitted and in preparation

8. Zauner S, Zhang Y, Leisch N, Violette M, Yuen B, Chen SC, Hausmann B, Osvatic JT, Prathap A, Schnorr SL, Kleiner M, **Petersen JM*** (in revision). A novel symbiosis between lucinid clams and intracellular *Shewanella* links trophic levels in a seagrass ecosystem. iScience

7. Fischer M-T, Seneca J, **Petersen JM** (in revision). Complete genome sequences of five aquatic *Janthinobacterium lividum* strains collected in Austria. Microbiology Resource Announcements

6. Vogel MA, Machairas F, Osvatic J, Ferchiou S, Hausmann B, Klun K, & **Petersen JM*** (2025). Symbiont diversity within *Loripes orbiculatus* and the case for multiple hosts. *bioRxiv*, 2025-10. (in review at The ISME Journal)

5. Schmelz P, Eckensperger S, Osvatic J, Seneca J, Alzubaidy H, **Petersen JM***. Host depletion kits improve microbiome analyses in environmental samples (in review at ISME Communications)

4. Sayavedra L, Gonzalez-Porras MA, Antony PA, Kreutzmann AC, Bach W, Michellod D, Kleiner M, Barrero-Canosa J, Leisch N, Rubin-Blum M, Liebeke M, **Petersen JM***, Dubilier N (in preparation) Methylophily in sulfur-oxidizing symbionts links the metabolism of co-occurring intracellular symbionts in deep-sea mussels.

3. Sudo ML, Batka VM, Kunert M, Leibrecht L, Osvatic JT, Yuen B, Hueffer T, Rattei T, **Petersen JM*** (in preparation). Distinct ecological strategies emerge from host-microbe-environment interactions.

2. Sudo ML, Elias O, Wang J, Carrion O, Gros O, Todd JD, **Petersen JM*** (in preparation). The importance of organosulphur compounds in chemosymbiotic lucinid clams.

1. Kück AC, Leibrecht L, Morel-Letelier I, Gros O, Wilkins LGE, Yuen B, **Petersen JM*** (in preparation). Host species shapes symbiont gene expression in lucinid bivalves from a Caribbean seagrass meadow.

+ 3 co-authorships in various stages of preparation and submission as 'Genome note' publications through my role as head of the hub 'Symbiosis as a driver for molluscan diversity', Aquatic Symbiosis Genomics project of the Sanger Institute and the Moore Foundation

Peer-reviewed publications

41. Wilkins L, Yuen B, **Petersen JM**, Oatley G, Sinclair E, Aunin E, Gettle N, Santos C, Paulini M, Niu H, McKenna V. The chromosomal genome sequence of the mollusc, *Ctena decussata* (OG Costa, 1829) and its bacterial endosymbiont *Candidatus* Thiodiazotropha sp. CDECU1 (Chromatiales). Wellcome Open Research. 2025 Aug 11;10:435. [version 1; peer review: 2 approved, 1 approved with reservations]

40. Anderson LC, Campbell B, Long-Fox B, **Petersen JM**, Jean Lim S, Oatley G, Sinclair E, Aunin E, Gettle N, Santos C, Paulini M. The genome sequences of the woven lucine, *Luciniscia nassula* (Conrad, 1846) and a bacterial endosymbiont. Wellcome Open Research. 2025 Apr 28;10:225. [version 1; peer review: 1 approved, 1 approved with reservations]

39. Rathur R, Ma Y, Xiong J, **Petersen JM***, Zhang X* (2025). Hemolymph microbiota and host immunity of crustaceans and mollusks. **The ISME Journal**, wraf133.

38. Alcaraz, CM, Séneca J, Kunert M, Pree C, Sudo M, & **Petersen, JM*** (2024). Sulfur-oxidizing symbionts colonize the digestive tract of their lucinid hosts. **The ISME Journal**, 18(1), wrae200.

37. McKenna V, Archibald JM, Beinart R, Dawson MN, Hentschel U, Keeling PJ, Lopes JV, Martin-Duran JM, **Petersen JM**, Sigwart JD, Simakov O, Sutherland KR, Sweet M, Talbot NJ, Thompson AW, Bender S, Harrison PW, Rajan J, Cochrane G, Berriman M, Lawniczak MKN, Blaxter M (2024) The Aquatic Symbiosis Genomics Project: probing the evolution of symbiosis across the Tree of Life [version 2; peer review: 1 approved, 1 approved with reservations]. Wellcome Open Res 2024, 6:254 (<https://doi.org/10.12688/wellcomeopenres.17222.2>)

36. Morel-Letelier I, Yuen B, Kück AC, Camacho-García YE, **Petersen JM**, Lara M, Leray M, Eisen JA, Osvatic JT, Gros O, Wilkins LGE (2024). Adaptations to nitrogen availability drive ecological divergence of chemosynthetic symbionts. **PLoS Genetics**

35. Sudo M, Osvatic JT, Taylor JD, Dufour S, Prathep A, Wilkins LGE, Rattei T, Yuen B, **Petersen JM*** (2024; **Editor's Pick**). SoxY gene family expansion underpins adaptation to diverse hosts and environments in symbiotic sulfide oxidizers. **mSystems**

34. Osvatic, JT, Yuen B, Kunert M, Wilkins L, Hausmann B, Girguis P, Lundin K, Taylor J, Jospin G, and **Petersen JM*** (2023). Gene loss and symbiont switching during adaptation to the deep sea in a globally distributed symbiosis. **The ISME Journal**
33. Zauner S, Vogel M, Polzin J, Yuen B, Mussman M, El-Hacen EM, **Petersen JM*** (2022) Microbial communities in developmental stages of lucinid bivalves. **ISME Communications** 2 (1)
32. Cardini U, Marín-Guirao L, Montilla LM, Marzocchi U, Chiavarini S, Rimauro J, Quero GM, **Petersen JM**, and Procaccini G (2022). Nested interactions between chemosynthetic lucinid bivalves and seagrass promote ecosystem functioning in contaminated sediments. **Frontiers in Plant Science** 13 (2022).
31. Amorim K, Loick-Wilde N, Yuen B, Osvatic JT, Wäge-Recchioni J, Hausmann B, **Petersen JM**, Fabian J, Wodarg D, Zettler ML (2022). Chemoautotrophy, symbiosis and sedimented diatoms support high biomass of benthic molluscs in the Namibian shelf. **Scientific Reports** 12, no. 1: 1-16.
30. Oortwijn T, de Fouw J, **Petersen JM**, van Gils JA (2022). Sulfur in lucinid bivalves inhibits intake rates of a molluscivore shorebird. **Oecologia**, 199(1), 69-78.
29. Nguyen TV, Alfaro AC, Mundy C, **Petersen JM**, & Ragg NL (2022). Omics research on abalone (*Haliotis* spp.): Current state and perspectives. **Aquaculture** 547, 737438.
28. Osvatic JT[§], Wilkins LGE[§], Leibrecht L, Leray M, Zauner S, Polzin J, Camacho Y, Gros O, van Gils J, Eisen JA, Yuen B[§], **Petersen JM***[§] (2021). Global biogeography of chemosynthetic symbionts reveals both localized and globally distributed symbiont groups. **Proceedings of the National Academy of Sciences, USA** 118(29) doi: 10.1073/pnas.2104378118
27. Leray M, Wilkins LG, Apprill A, Bik HM, Clever F, Connolly SR, De Leon ME, Duffy JE, Ezzat L, Gignoux-Wolfsohn S, Herre EA, Kaye JZ, Kline DI, Kueneman JG, McCormick MK, McMillan O, O'Dea A, Pereira TJ, **Petersen JM**, Petticord DF, Torchin ME, Vega Thurber R, Videvall E, Wcislo WT, Yuen B, Eisen, JA (2021). Natural experiments and long-term monitoring are critical to understand and predict marine host-microbe ecology and evolution. **PLoS Biology**, 19(8), e3001322 doi: 10.1371/journal.pbio.3001322
26. **Petersen JM***, Yuen B (2021) The symbiotic 'all-rounders': Partnerships between marine animals and chemosynthetic nitrogen-fixing bacteria. **Applied and Environmental Microbiology** 87(5), e02129-20 doi: 10.1128/AEM.02129-20
25. Huang Z, **Petersen JM**, Shao Z (2021) A novel SAR324 bacterium associated with abalone, *Haliotis diversicolor*. **Aquaculture Research** 52(5), 1945-1953 doi: 10.1111/are.15043
24. Huang Z, **Petersen JM**, Martijn J, Ettema TJ, Shao Z (2020). A novel alphaproteobacterium with a small genome identified from the digestive gland of multiple species of abalone. **Environmental Microbiology Reports** 12: 387–395 doi:10.1111/1758-2229.12845
23. Yuen B, Polzin J, **Petersen JM*** (2019). Organ transcriptomes of the lucinid clam *Loripes orbiculatus* (Poli, 1791) provide insights into their specialized roles in the biology of a chemosymbiotic bivalve. **BMC Genomics** 20: 1-14 doi: 10.1186/s12864-019-6177-0
22. Cardini U, Bartoli M, Lee R, Luecker S, Mooshammer M, Polzin J, Weber M, **Petersen JM*** (2019). Chemosymbiotic bivalves contribute to the nitrogen budget of seagrass ecosystems. **ISME Journal** 13: 3131-3134 doi: 10.1038/s41396-019-0486-9

21. Romero Picazo D, Dagan T, Ansorge R, **Petersen JM**, Dubilier N, Kupczok A (2019). Horizontally transmitted symbiont populations in deep-sea mussels are genetically isolated. *ISME Journal* 13: 2954-2968 doi: 10.1038/s41396-019-0475-z
20. Ansorge R, Romano S, Sayavedra L, Kupczok A, Tegetmeyer HE, Dubilier N, **Petersen JM*** (2019). Diversity matters: Deep-sea mussels harbor multiple symbiont strains. *Nature Microbiology* 4: 2487-2497 doi: 10.1038/s41564-019-0572-9
19. Assié A, Leisch N, Meier DV, Gruber-Vodicka H, Tegetmeyer HE, Meyerdierks A, Kleiner M, Hinzke T, Joye SB, Saxton M, Dubilier N, **Petersen JM*** (2019). Horizontal acquisition of a patchwork Calvin cycle by symbiotic and free-living Campylobacterota (formerly Epsilonproteobacteria). *ISME Journal* 14: 104–122 doi: 10.1038/s41396-019-0508-7
18. **Petersen JM***, Osvatic J (2018). Microbiomes in natura: The importance of invertebrates for understanding the natural variety of animal-microbe interactions. *mSystems* 3: e00179-17 doi: 10.1128/mSystems.00179-17
17. **Petersen JM***, Kemper A, Gruber-Vodicka H, Cardini U, van der Geest M, Mussmann M, Bulgheresi S, Seah BKB, Chakkiath PA, Herbold C, Liu D, Belitz A, Weber M (2016). Chemosynthetic symbionts of marine invertebrate animals are capable of nitrogen fixation. *Nature Microbiology* 2: 16195 doi:10.1038/nmicrobiol.2016.195
16. Ponnudurai, RP, Kleiner M, Sayavedra L, **Petersen JM**, Moche M, Otto A, Becher D, Takeuchi T, Satoh N, Dubilier N, Schweder T, Markert S (2016). Metabolic and physiological interdependencies in the *Bathymodiolus azoricus* symbiosis. *ISME Journal* 11: 463-477 doi:10.1038/ismej.2016.124
15. Assie A, Borowski C, van der Heijden K, Raggi L, Geier B, Leisch N, Schimak MP, Dubilier N, **Petersen JM*** (2016) A specific and widespread association between deep-sea *Bathymodiolus* mussels and a novel family of Epsilonproteobacteria. *Environmental Microbiology Reports* 8: 805-813 doi: 10.1111/1758-2229.12442
14. Breusing C, Biastoch A, Drews A, Metaxas A, Jollivet D, Vrijenhoek RC, Bayer T, Melzner F, Sayavedra L, **Petersen JM**, Dubilier N, Schilhabel MB, Rosenstiel P, Reusch TBH (2016). Biophysical and population genetic models predict presence of "phantom" stepping stones connecting Mid-Atlantic Ridge vent ecosystems. *Current Biology* 26: 1 – 11.
13. Sayavedra L, Kleiner M, Ponnudurai R, Wetzel S, Pelletier E, Barbe V, Shoguchi E, Satoh N, Reusch TBH, Rosenstiel P, Schilhabel MB, Becher D, Schweder T, Markert S, Dubilier N, **Petersen JM*** (2015) An abundance of toxin-related genes in the genome of beneficial symbionts from deep-sea hydrothermal vent mussels. *eLife* e07966
12. Zimmermann J, Lott C, Weber M, Ramette A, Bright M, Dubilier N, **Petersen JM*** (2014) Dual symbiosis with co-occurring sulfur-oxidizing symbionts in vestimentiferan tubeworms from a Mediterranean hydrothermal vent. *Environmental Microbiology* 16: 3638-3656 doi: 10.1111/1462-2920.12427



This paper was featured on the cover of the December 2014 issue of Environmental Microbiology

11. Jan C, **Petersen JM**[§], Werner J[§], Teeling H[§], Huang S, Glöckner FO, Golyshina OV, Dubilier N, Golyshin PN, Jebbar M and Cambon-Bonavita M-A (2014) The gill chamber epibiosis of deep-sea shrimp *Rimicaris exoculata*: an in-depth metagenomic investigation and discovery of Zetaproteobacteria.

Environmental Microbiology 16: 2723–2738 doi: 10.1111/1462-2920.1240

10. Raggi L, Schubotz F, Hinrichs K-U, Dubilier N, **Petersen JM*** (2013) Bacterial symbionts of *Bathymodiolus* mussels and *Escarpia* tubeworms from Chapopote, an asphalt seep in the southern Gulf of Mexico. **Environmental Microbiology** 15: 1969–1987 doi: 10.1111/1462-

2920.12051

9. Kleiner M, **Petersen JM**, Dubilier N (2012) Convergent and divergent evolution of metabolism in sulfur-oxidizing symbionts and the role of horizontal gene transfer. **Current Opinion in Microbiology** 15:621–631 doi: 10.1016/j.mib.2012.09.003

8. **Petersen JM***, Wentrup C, Verna C, Knittel K, Dubilier N (2012) Origins and evolutionary flexibility of chemosynthetic symbionts from deep-sea animals. **The Biological Bulletin**. 223: 123–137.

7. van der Heijden K, **Petersen JM**, Dubilier N, Borowski C (2012) Gene flow across the equatorial belt on the Mid-Atlantic Ridge in chemosynthetic bivalves and their symbionts. **PLoS One** 7(7): e39994. doi:10.1371/journal.pone.0039994.



6. **Petersen JM**[§], Zielinski FU[§], Pape T, Seifert R, Moraru C, Amann R, Hourdez S, Girguis PR, Wankel SD, Barbe V, Pelletier E, Fink D, Borowski C, Bach W, and Dubilier N (2011) Hydrogen is an energy source for hydrothermal vent symbioses. **Nature** 476: 176–180 doi:10.1038/nature10325

This paper was featured on the cover of the August 11th issue of Nature

5. Hügler M, **Petersen JM**, Dubilier N, Imhoff JF, Sievert SM (2011) Pathways of carbon and energy metabolism of the epibiotic community associated with the vent shrimp *Rimicaris exoculata*. **PLoS One** 6, doi:e1601810.1371/journal.pone.0016018.

4. **Petersen JM**, Ramette A, Lott C, Cambon-Bonavita MA, Zbinden M, and Dubilier N (2010) Biogeography of filamentous gamma- and epsilonproteobacterial epibionts on the shrimp *Rimicaris exoculata* from four Mid-Atlantic Ridge hydrothermal vent fields. **Environmental Microbiology** 12: 2204–2218 doi: 10.1111/j.1462-2920.2009.02129.x

3. **Petersen JM** and Dubilier N (2010) Symbiotic methane oxidizers. In: **Microbiology of Hydrocarbons, Oils, Lipids and Derived Compounds**. Ed. Kenneth N. Timmis. Springer.

2. Perner M, **Petersen JM**, Zielinski FU, Gennerich H-H, Seifert R (2010) Geochemical constraints on the diversity and activity of H₂-oxidizing bacteria and archaea in diffuse hydrothermal fluids from a basalt- and an ultramafic-hosted vent. **FEMS Microbiology Ecology** 74: 55-71 doi: 10.1111/j.1574-6941.2010.00940.x

1. **Petersen JM** and Dubilier N (2009) Methanotrophic symbioses in marine invertebrates. **Environmental Microbiology Reports** 1: 319–335 doi: 10.1111/j.1758-2229.2009.00081.x

Additional Publications (including preprints)

6. Ansorge R, Romano S, Sayavedra L, Rubin-Blum M, Gruber-Vodicka H, Scilipoti S, Molari M, Dubilier N, **Petersen JM***. The hidden pangenome: comparative genomics reveals pervasive diversity in symbiotic and free-living sulfur-oxidizing bacteria. **BioRxiv** (2020).

5. Sayavedra L, Ansorge R, Rubin-Blum M, Leisch N, Dubilier N, **Petersen JM***. Horizontal acquisition followed by expansion and diversification of toxin-related genes in deep-sea bivalve symbionts. **BioRxiv** (2019): 605386.

4. **Petersen JM*** (2016) Dark energy on your dinner plate. **Current Biology** 26: R1277-R1279.

3. Cordes EE, Michel APM, **Petersen JM**, Wankel SD, Ansorge R, Girguis PR, Leisch N, Smart C, Roman C, Wetzel S, Vidoudez C (2016) ROV Hercules investigates brine lakes on the bottom of the ocean. **Oceanography** 29: 30 – 31.

2. **Petersen JM***, Dubilier N (2014) Gene swapping in the dead zone. **eLife** 3: e04600.

1. Fisher CR, Baums IB, Demopoulos AWJ, Dubilier N, Girard F, Kovacs K, Kurman M, Mentch J, **Petersen JM**, Saunders M, Sayavedra L, Sibert RJ, Vohsen S (2015) Ecosystem Impacts of Oil and Gas Inputs to the Gulf of Mexico (ECOGIG). **Oceanography** 28: 28 – 29.