

- Since 2011 Public lectures at Maritime days and open-ship days (i.e. RV MS MERIAN, RV SONNE)
- 2010 Supervisor of Youth researcher 'Jugend forscht' project of Marie Tegtmeier (1st price in regional competition)

PARTICIPATION IN OTHER NATIONAL AND INTERNATIONAL PROJECTS

- Since 2012 MARUM, funding by German Excellence Initiative
- 2005 – 2008 MUMM 2 (BMBF) Microbial turnover of methane above marine gas hydrate
- 2005 – 2008 RCOM (DFG) Research Center Ocean Margins (University Bremen)
- 2004 – 2006 7th EU FP METROL (Methane fluxes in marine sediments)

MAYOR ONGOING NATIONAL AND INTERNATIONAL COLLABORATIONS

- Halina Tegetmeyer, CeBiTec, University Bielefeld Germany, sequencing center
- Gerhard Bohrmann; Uni Bremen, field research Hydrocarbon Seepage GoM;
- Kai-Uwe Hinrichs; MARUM, Univ. Bremen, several dual SIP applications;
- Dietmar Riedel, Electron Microscopy MPI for Biophysical Chemistry, Göttingen
- Andreas Teske, University of North Carolina, USA; Expeditions and projects at Guaymas Basin
- Florin Musat, Helmholtz Institute for Environmental Sciences, Leipzig, Germany.
- Hydra Station (M. Weber, C. Lott), Elba, Italy, Abiogenic hydrocarbons seepage in coastal sands

EXPERIENCE IN FIELD RESEARCH (since expeditions only)

- Dec. 2016* RV ATLANTIS 37-06 with submarine ALVIN: Thermophilic hydrocarbon oxidation in the Guaymas Basin, project leader Hydrocarbon-oxidizing microorganisms
- Sept. 2016* RV POLARSTERN cruise PS101: Project leader Biodiversity and hydrocarbon oxidation at the Karasik seamount (Gakkel Ridge)
- March 2015* RV METEOR ROV QUEST M114-2: PI Energy fluxes at the Campeche hydrocarbon seeps (Gulf of Mexico)
- July 2014* RV POLARSTERN ANT XXVIII/3; Project leader Biodiversity and hydrocarbon oxidation at the Aurora Vent field (Gakkel Ridge)
- Dec. 2009* RV ATLANTIS 82 with submarine ALVIN: PI Thermophilic hydrocarbon oxidation in the Guaymas Basin
- May 2009* HIMMERSFJARDEN in collaboration with University of Stockholm; Microbial activity in the Baltic fjord sediments; first field application of Dual-SIP approach
- Feb 2007* RV SONNE, SO191-2 with IfM-GEOMAR (COMET/MUMM project); Microbial activity in cold seeps of the New Zealand continental margin
- Feb 2006* RV METEOR/ROV QUEST Cruise M67/2b, RCOM Bremen; Microbial activity at the Campeche hydrocarbon seeps

Oral presentations at conferences since 2010:

2016: A novel archaeal-bacterial consortium that couples butane oxidation to sulfate reduction; ISME Meeting, Montreal, Canada **2014:** Physiological interaction in marine thermophilic methane-oxidizing consortia involving ANME-1 The ISME Meeting, Seoul, South Korea **2013:** Apparent inverse carbon isotope effects during the anaerobic oxidation of methane Goldschmidt Conference **2012** Assessing microbial activity and carbon fixation in the marine subsurface – Lessons from Lipid Dual Stable Isotope Probing ISME 14. **2011** Assessing subsurface microbial carbon assimilation by lipid 13CDIC-D2O stable isotope probing; ISSM and IMOG, **2010** IODP Workshop on subsurface microbiology. Tokyo, Japan. Assessing microbial activity in subsurface environments. Multiple isotope probing approaches reveal surprising metabolic features of microorganisms catalyzing AOM Gordon Conference C1-metabolism

REVIEWER FOR INTERNATIONAL JOURNALS AND FUNDING AGENCIES

Journals: Science, Proc. National Acad. Science USA, Nature Geoscience, Environmental Microbiology, Applied and Environmental Microbiology, ISME Journal, Extremophiles, Geobiology, Limnology & Oceanography, Biogeosciences, Geochimica et Cosmochimica Acta, Life, Sedimentary Geology, FEMS, Applied Microbiology and Biotechnology, others| Funding agencies: Deutsche Forschungsgesellschaft (DFG), Netherlands Organisation for Scientific Research (NWO); The Britain-Israel Research and Academic Exchange (BIRAX)

PUBLICATIONS IN INTERNATIONAL PEER-REVIEWED SCIENTIFIC JOURNALS

(complete record; h-index 15; 758 citations; google scholar, 31st of Jan . 2017; ***key publications of last 5 years with first/ shared first or senior authorship and/ or correspondence)

Published

- ***R. Laso-Pérez, **G. Wegener**, K. Knittel, F. Widdel, K. J. Harding, V. Krukenberg., D. V. Meier., M. Richter., H. E. Tegetmeyer., D. Riedel, H.H. Richnow, L. Adrian, T. Reemtsma, O. Lechtenfeld, F. Musat (2016) Thermophilic archaea activate butane via alkyl-CoM formation. **Nature**, 539(7629):396-401.
- H. Sahling, M. Rubin Blum, C. Borowski, E. Escobar-Briones, A. Gaytán-Caballero, C.-W. Hsu, M. Loher, I. MacDonald, Y. Marcon, T. Pape, M. Römer, F. Schubotz, D. Smrzka, **G. Wegener** and G. Bohrmann. Massive asphalt deposits, oil seepage, and gas venting support abundant chemosynthetic communities at Campeche Knolls, southern Gulf of Mexico; **Biogeosciences**, 13:4491-4512
- ***Krukenberg V., Harding K., Richter M., Glöckner F.-O., Gruber Vodicka H., Adam B., Berg J., Knittel K., Tegetmeyer H.E., Boetius A., **Wegener G.** (2016) *Candidatus* Desulfofervidus auxilii, a hydrogenotrophic sulfate-reducing bacterium involved in the thermophilic anaerobic oxidation of methane. **Environ Microbiol** . 18:3073-3091.
- *****Wegener, G.** Kellermann, M.Y., Elvert, M. Tracking activity and function of microorganisms by stable isotope probing of membrane lipids (2016) **Current Opinion in Biotechnology**; *Volume 41, Pages 43–52* (invited review article).
- Ruff S.E., Kuhfuss H., **Wegener G.**, Lott C., Ramette A., Wiedling J., Knittel K., Weber M. Small-scale microbial heterogeneity at a shallow-water, permeable-sediment methane seep habitat, Elba, Italy, **Front Microbiol** (doi: 10.3389/fmicb.2016.00374)
- Kellermann M.Y., Yoshinaga M.Y., **Wegener G.**, Krukenberg V., Hinrichs K.-U. (2016) Tracing the production and fate of individual archaeal intact polar lipids by stable isotope probing. **Org Geochem** 95, 13–20.
- *****Wegener G.**, Krukenberg V., Ruff S.E., Kellermann M.Y., Knittel K. (2016) Metabolic capabilities of microorganisms involved in and associated with the anaerobic oxidation of methane. **Front Microbiol** *V7 (article 46)*.
- *****Wegener, G.**, Krukenberg, V., Riedel, D. Tegetmeyer, H.E., Boetius A. (2015) Intercellular wiring enables electron transfer between methanotrophic archaea and bacteria **Nature** 526 (7574), 587-590.
- ***Yoshinaga, M.Y., Holler, T., Goldhammer, T., **Wegener, G.**, Pohlman, J.W., Brunner, B., Kuypers, M.M.M., Hinrichs, K.-U., Elvert, M. (2014) Carbon isotope equilibration during sulphate-limited anaerobic oxidation of methane, **Nature Geoscience**.
- Allen, K. D., **Wegener, G.**, White R. H. (2014) Discovery of multiple modified F430 coenzymes in methanogens and anaerobic methanotrophic archaea suggests possible new roles for F430 in Nature." **Appl Environ Microbiol** 80.20 (2014): 6403-6412.
- Xie, S., Lipp, J.S., **Wegener, G.**, Ferdelman, T. and Hinrichs, K.-U. (2013) Turnover of microbial lipids in the deep biosphere and growth of benthic archaeal populations, **Proc Natl Acad Sc USA**, 110(15), 6010-6014.
- Ruff, S.E., Arnds, J., Knittel, K., Amann, R.I., **Wegener, G.**, Ramette, A., Boetius, A. (2013) Microbial communities of deep sea methane seeps at Hikurangi continental margin (New Zealand), **PlosOne**, 8(9) e72627
- de Beer, D., Haeckel, M., Neumann, J. **Wegener., G.**, Inagaki, F. Boetius, A. (2013): Saturated CO₂ inhibits microbial processes in CO₂-vented deep-sea sediments, **Biogeosciences**, 10, 5639-5649.
- Meyer, S., **Wegener, G.**, Lloyd, K.G., Teske, A., Boetius, A. & Ramette, A. (2013) Microbial habitat connectivity across spatial scales and hydrothermal temperature gradients at Guaymas Basin, **Front Microbiol** 4, 1-11.

- Milucka, J., Ferdelman, T.G., Polerecky, L., Franzke, D., **Wegener, G.**, Schmid, M., Wagner, M., Widdel, F. and Kuypers, M.M.M. (2012) Zerovalent sulfur is a key intermediate in marine methane oxidation. **Nature** 491, 541-546.
- *****Wegener, G.**, Bausch, M., Holler, T., Nguyen, M. T., Prieto Mollar, X., Kellermann, M.Y., Hinrichs, K.-U. and Boetius, A. (2012) Assessing sub-seafloor microbial activity by combined stable isotope probing with deuterated water and ^{13}C -bicarbonate. **Environ Microbiol** 14(6) 1517-1527
- ***Kellermann, M.Y., **Wegener, G.**, Elvert, M., Yoshinaga, M.Y., Lin, Y.-L., Holler, T., Prieto Mollar, X., Knittel, K., Hinrichs, K.-U. (2012) Autotrophy as a predominant mode of carbon fixation in anaerobic methane-oxidizing microbial communities, **Proc Natl Acad Sc USA**, 109 (49) 19321-19326.
- Thang, N. M., Brüchert, V. Formolo, M., **Wegener, G.**, Ginters, L. Jørgensen, B.B. (2012) The impact of sediment and carbon fluxes on the biogeochemistry of methane and sulfur in littoral Baltic Sea sediments (2012) **Estuaries and Coasts** 36(1), 98-115.
- Holler, T., **Wegener, G.** Niemann, H., Deusner, C., Ferdelman, T.G., Boetius, B., Brunner B. and F. Widdel (2011) Carbon and sulfur back flux during anaerobic microbial oxidation of methane and
- ***Holler, T., Widdel, F., Knittel, K., Amann, R., Kellermann, M. Y., Hinrichs, K. U., Teske, A., Boetius, A. & **Wegener, G.** (2011). Thermophilic anaerobic oxidation of methane by marine microbial consortia. **ISME J**, 5(12), 1946-1956.
- Beck, M., Riedel, T., Graue, J., Köster, J. Kowalski, N., Wu, C.S., **Wegener, G.**, Lipsewers, Y., Freund, H., Böttcher, M.E. (2010) Imprint of past and present environmental conditions on microbiology and biogeochemistry of coastal Quaternary sediments” **Biogeosciences** 8, 55–68.
- Dale, A. W., Sommer, S., Haeckel, M., Wallmann, K., Linke, P., **Wegener, G.**, Pfannkuche, O. (2010) Pathways and regulation of carbon, sulfur and energy transfer in marine sediments overlying methane gas. **Geochim Cosmochim Ac** 74, 5763 – 5784.
- Wegener, G.** and Boetius, A. (2009). An experimental study on short-term changes in the anaerobic oxidation of methane in response to varying methane and sulfate fluxes. **Biogeosciences** 6(5): **867-876**.
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