**Chapter 9**

**General**

Kayastha, K. *et al*. (2022). Structure-based electron-confurcation mechanism of the Ldh-EtfAB complex. *eLife* **11**, e77095. <https://doi.org/10.7554/eLife.77095>

Stevens, E. & Marco, M. L. (2023). Bacterial extracellular electron transfer in plant and animal ecosystems. *FEMS Microbiology Reviews* **47**(3), fuad019. <https://doi.org/10.1093/femsre/fuad019>

Schut, G. J. *et al*. (2022). An abundant and diverse new family of electron bifurcating enzymes with a non-canonical catalytic mechanism. *Frontiers in Microbiology* **13**, 946711. <https://www.frontiersin.org/articles/10.3389/fmicb.2022.946711>

Truchon, A. N. *et al*. (2023). Plant-pathogenic *Ralstonia* phylotypes evolved divergent respiratory strategies and behaviors to thrive in xylem. *mBio* **14**(1), e03188-22. <https://journals.asm.org/doi/abs/10.1128/mbio.03188-22>

Wackett, L. P. (2022). Electron bifurcation in anaerobic microbes: An annotated selection of World Wide Web sites relevant to the topics in environmental microbiology. *Environmental Microbiology* **24**(11), 5611-5612. <https://doi.org/10.1111/1462-2920.15586>

Wackett, L. P. (2023). Microbial nanowires: An annotated selection of World Wide Web sites relevant to the topics in environmental microbiology. *Environmental Microbiology* **25**(2), 593-594. <https://doi.org/10.1111/1462-2920.16051>

Yuly, J. L. *et al*. (2020). Universal free-energy landscape produces efficient and reversible electron bifurcation. *Proceedings of the National Academy of Sciences of the USA* **117**(35), 21045-21051. <https://www.pnas.org/doi/abs/10.1073/pnas.2010815117>

**Denitrification**

Dong, Y. *et al*. (2023). Heterotrophic nitrification and aerobic denitrification characteristics of the psychrotolerant *Pseudomonas peli* NR-5 at low temperatures. *Bioprocess & Biosystems Engineering* **46**(5), 693-706. <https://doi.org/10.1007/s00449-023-02854-9>

Hu, L. *et al*. (2022). Achieving ammonium removal through anammox-derived feammox with low demand of Fe(III). *Frontiers in Microbiology* **13**, 918634. <https://www.frontiersin.org/articles/10.3389/fmicb.2022.918634>

Huang, J. *et al*. (2023). Metabolic performance and fate of electrons during nitrate-reducing Fe(II) oxidation by the autotrophic enrichment culture KS grown at different initial Fe/N ratios. *Applied & Environmental Microbiology* **89**(3), e00196-23. <https://journals.asm.org/doi/abs/10.1128/aem.00196-23>

Huang, S. *et al*. (2023). Sunlight significantly enhances soil denitrification via an interfacial biophotoelectrochemical pathway. *Environmental Science & Technology* **57**(20), 7733-7742. <https://doi.org/10.1021/acs.est.3c00236>

Jin, Y. *et al*. (2023). Insight into the roles of microalgae on simultaneous nitrification and denitrification in microalgal-bacterial sequencing batch reactors: Nitrogen removal, extracellular polymeric substances, and microbial communities. *Bioresource Technology* **379**, 129038. <https://doi.org/10.1016/j.biortech.2023.129038>

Lou, L. *et al*. (2023). The advance of heterotrophic nitrification aerobic denitrification microorganisms in wastewater treatment. *Bioresource Technology Reports* **22**, 101495. <https://doi.org/10.1016/j.biteb.2023.101495>

Mu, H. *et al*. (2023). Characterization of *Achromobacter denitrificans* QHR-5 for heterotrophic nitrification-aerobic denitrification with iron oxidation function isolated from BSIS：Nitrogen removal performance and enhanced SND capability of BSIS. *Biochemical Engineering Journal* **191**, 108759. <https://doi.org/10.1016/j.bej.2022.108759>

Ray, A. & Spiro, S. (2023). DksA, ppGpp, and RegAB regulate nitrate respiration in *Paracoccus denitrificans*. *Journal of Bacteriology* **205**(4), e00027-23. <https://journals.asm.org/doi/abs/10.1128/jb.00027-23>

Schmitz, E. V. *et al*. (2023). Reconnaissance of oxygenic denitrifiers in agriculturally impacted soils. *mSphere* **8**(3), e00571-22. <https://journals.asm.org/doi/abs/10.1128/msphere.00571-22>

Song, S. *et al*. (2023). Isolation of a heterotrophic nitrification-aerobic denitrification strain and identification of its potential electricity generation ability in microbial fuel cells. *Environmental Technology* **44**(1), 82-92. <https://doi.org/10.1080/09593330.2021.1964001>

Yang, Q. *et al*. (2023). Insight into the cold adaptation mechanism of an aerobic denitrifying bacterium: *Bacillus simplex* H-b. *Applied & Environmental Microbiology* **89**(2), e01928-22. <https://journals.asm.org/doi/abs/10.1128/aem.01928-22>

Zhang, X. *et al*. (2023). Efficient aerobic denitrification without nitrite accumulation by Pseudomonas mendocina HITSZ-D1 isolated from sewage sludge. *Bioresource Technology* **379**, 129039. <https://doi.org/10.1016/j.biortech.2023.129039>

Zhou, X. *et al*. (2023). Genomics and nitrogen metabolic characteristics of a novel heterotrophic nitrifying-aerobic denitrifying bacterium *Acinetobacter oleivorans* AHP123. *Bioresource Technology* **375**, 128822. <https://doi.org/10.1016/j.biortech.2023.128822>

**Metal reduction**

Abuyen, K. & El-Naggar, M. Y. (2023). Soluble iron enhances extracellular electron uptake by *Shewanella oneidensis* MR-1. *ChemElectroChem* **10**(4), e202200965. <https://doi.org/10.1002/celc.202200965>

Acosta-Grinok, M. *et al*. (2022). Looking for the mechanism of arsenate respiration of *Fusibacter* sp. strain 3D3, independent of ArrAB. *Frontiers in Microbiology* **13**, 1029886. <https://www.frontiersin.org/articles/10.3389/fmicb.2022.1029886>

Awate, B. P. *et al*. (2023). Electrochemical characterization of the periplasmic PpcA *c*-cytochrome of *Geobacter sulfurreducens* reveals its affinity for uranium. *ChemElectroChem* **10**(9), e202200916.

Baquero, D. P. *et al*. (2023). Extracellular cytochrome nanowires appear to be ubiquitous in prokaryotes. *Cell* **186**(13), 2853-2864.e2858. <https://doi.org/10.1016/j.cell.2023.05.012>

Cao, L. *et al*. (2023). Physiological and transcriptional studies reveal Cr(VI) reduction mechanisms in the exoelectrogen *Cellulomonas fimi* Clb-11. *Frontiers in Microbiology* **14**, 1161303. <https://www.frontiersin.org/articles/10.3389/fmicb.2023.1161303>

Cheng, K. *et al*. (2022). Hematite-promoted nitrate-reducing Fe(II) oxidation by *Acidovorax* sp. strain BoFeN1: Roles of mineral catalysis and cell encrustation. *Geobiology* **20**(6), 810-822. <https://doi.org/10.1111/gbi.12510>

Cheng, M. *et al*. (in press). Reduction of selenite and tellurite by a highly metal-tolerant marine bacterium. *International Microbiology*. <https://doi.org/10.1007/s10123-023-00382-w>

Ding, Q. *et al*. (2023). Modular engineering strategy to redirect electron flux into the electron-transfer chain for enhancing extracellular electron transfer in *Shewanella oneidensis*. *ACS Synthetic Biology* **12**(2), 471-481. <https://doi.org/10.1021/acssynbio.2c00408>

Fessler, M. *et al*. (2023). Conjugative plasmids inhibit extracellular electron transfer in *Geobacter sulfurreducens*. *Frontiers in Microbiology* **14**, 1150091. <https://www.frontiersin.org/articles/10.3389/fmicb.2023.1150091>

Gu, Y. *et al*. (2023). Structure of *Geobacter* cytochrome OmcZ identifies mechanism of nanowire assembly and conductivity. *Nature Microbiology* **8**(2), 284-298. <https://doi.org/10.1038/s41564-022-01315-5>

Guo, J. *et al*. (2022). The roles of DmsEFAB and MtrCAB in extracellular reduction of iodate by *Shewanella oneidensis* MR-1 with lactate as the sole electron donor. *Environmental Microbiology* **24**(11), 5039-5050. <https://doi.org/10.1111/1462-2920.16130>

Han, S. *et al*. (2023). *Geothrix oryzisoli* sp. nov., a ferric iron-reducing bacterium isolated from paddy soil. *Antonie van Leeuwenhoek* **116**(5), 477-486. <https://doi.org/10.1007/s10482-023-01817-0>

Han, S. *et al*. (2023). *Geothrix fuzhouensis* sp. nov. and *Geothrix paludis* sp. nov., two novel Fe(III)-reducing bacteria isolated from paddy soil. *International Journal of Systematic & Evolutionary Microbiology* **73**(5), 0.005898. <https://doi.org/10.1099/ijsem.0.005898>

Kalsoom, A. *et al*. (2023). Chromate removal by *Enterobacter cloacae* strain UT25 from tannery effluent and Its potential role in Cr (VI) remediation. *Current Microbiology* **80**(3), 99. <https://doi.org/10.1007/s00284-023-03194-3>

Li, B. *et al*. (2023). Iron oxides act as an alternative electron acceptor for aerobic methanotrophs in anoxic lake sediments. *Water Research* **234**, 119833. <https://doi.org/10.1016/j.watres.2023.119833>

Liou, Y.-X. *et al*. (2023). Investigating the extracellular-electron-transfer mechanisms and kinetics of *Shewanella decolorationis* NTOU1 reducing graphene oxide via lactate metabolism. *Bioengineering* **10**(3), 311. <https://www.mdpi.com/2306-5354/10/3/311>

Long, X. *et al*. (2023). Mechano-control of extracellular electron transport rate via modification of inter-heme coupling in bacterial surface cytochrome. *Environmental Science & Technology* **57**(19), 7421-7430. <https://doi.org/10.1021/acs.est.3c00601>

Nixon, S. L. *et al*. (2022). Limitations of microbial iron reduction under extreme conditions. *FEMS Microbiology Reviews* **46**(6), fuac033. <https://doi.org/10.1093/femsre/fuac033>

Ramli, N. N. *et al*. (2023). Metabolic pathway of Cr(VI) reduction by bacteria: A review. *Microbiological Research* **268**, 127288. <https://doi.org/10.1016/j.micres.2022.127288>

Rivera-Lugo, R. *et al*. (2023). Distinct energy-coupling factor transporter subunits enable flavin acquisition and extracytosolic trafficking for extracellular electron transfer in *Listeria monocytogenes*. *mBio* **14**(1), e03085-22. <https://journals.asm.org/doi/abs/10.1128/mbio.03085-22>

Sun, Y. *et al*. (2023). Hexavalent chromium removal by a resistant strain *Bacillus cereus* ZY-2009. *Environmental Technology* **44**(13), 1926-1935. <https://doi.org/10.1080/09593330.2021.2016994>

Wang, F. *et al*. (2023). Microbial nanowires: type IV pili or cytochrome filaments? *Trends in Microbiology* **31**(4), 384-392. <https://doi.org/10.1016/j.tim.2022.11.004>

Xie, J. *et al*. (2023). Microbial reduction of antimony(V)-bearing ferrihydrite by *Geobacter sulfurreducens*. *Applied & Environmental Microbiology* **89**(3), e02175-22. <https://journals.asm.org/doi/abs/10.1128/aem.02175-22>

Xiong, C. *et al*. (2023). Comparative analysis of active networks reveals the changes of key proteins and their interactions under different oxygen levels in *Shewanella oneidensis* MR-1. *Annals of Microbiology* **73**(1), 14. <https://doi.org/10.1186/s13213-023-01718-7>

Yadav, S. *et al*. (2022). *Geoalkalibacter halelectricus* SAP-1 sp. nov. possessing extracellular electron transfer and mineral-reducing capabilities from a haloalkaline environment. *Environmental Microbiology* **24**(11), 5066-5081. <https://doi.org/10.1111/1462-2920.16200>

Yu, H. *et al*. (2023). Engineering outer membrane vesicles to increase extracellular electron transfer of *Shewanella oneidensis*. *ACS Synthetic Biology* **12**(6), 1645-1656. <https://doi.org/10.1021/acssynbio.2c00636>

Zhang, X. *et al*. (2023). Exogenous electroactive microbes regulate soil geochemical properties and microbial communities by enhancing the reduction and transformation of Fe(III) minerals. *Environmental Science & Technology* **57**(20), 7743-7752. <https://doi.org/10.1021/acs.est.3c00407>

**Sulfidogenesis**

Bruns, S. *et al*. (2023). A novel coenzyme A analogue in the anaerobic, sulfate-reducing, marine bacterium *Desulfobacula toluolica* Tol2T. *ChemBioChem* **24**(2), e202200584. <https://doi.org/10.1002/cbic.202200584>

Davidova, I. A. *et al*. (2022). *Desulfoferrobacter suflitae* gen. nov., sp. nov., a novel sulphate-reducing bacterium in the *Deltaproteobacteria* capable of autotrophic growth with hydrogen or elemental iron. *International Journal of Systematic & Evolutionary Microbiology* **72**(8): 0.005483.

Ferreira, D. *et al*. (2023). DsrC is involved in fermentative growth and interacts directly with the FlxABCD–HdrABC complex in *Desulfovibrio vulgaris* Hildenborough. *Environmental Microbiology* **25**(5), 962-976. <https://doi.org/10.1111/1462-2920.16335>

Gao, P. & Fan, K. (2023). Sulfur-oxidizing bacteria (SOB) and sulfate-reducing bacteria (SRB) in oil reservoir and biological control of SRB: a review. *Archives of Microbiology* **205**(5), 162. <https://doi.org/10.1007/s00203-023-03520-0>

Hashimoto, Y. *et al*. (2022). Physiological and comparative proteomic characterization of *Desulfolithobacter dissulfuricans* gen. nov., sp. nov., a novel mesophilic, sulfur-disproportionating chemolithoautotroph from a deep-sea hydrothermal vent. *Frontiers in Microbiology* **13**, 1042116. <https://www.frontiersin.org/articles/10.3389/fmicb.2022.1042116>

Kpebe, A. *et al*. (2023). An essential role of the reversible electron-bifurcating hydrogenase Hnd for ethanol oxidation in *Solidesulfovibrio fructosivorans*. *Frontiers in Microbiology* **14**, 1139276. <https://www.frontiersin.org/articles/10.3389/fmicb.2023.1139276>

Payne, N. *et al*. (2023). NMR-based metabolomic analysis of the physiological role of the electron-bifurcating FeFe-hydrogenase Hnd in *Solidesulfovibrio fructosivorans* under pyruvate fermentation. *Microbiological Research* **268**, 127279. <https://doi.org/10.1016/j.micres.2022.127279>

Pettinato, E. *et al*. (2022). Succinyl-CoA:acetate CoA-transferase functioning in the oxidative tricarboxylic acid cycle in *Desulfurella acetivorans*. *Frontiers in Microbiology* **13**, 1080142. <https://www.frontiersin.org/articles/10.3389/fmicb.2022.1080142>

Schut, G. J. *et al*. (2022). An abundant and diverse new family of electron bifurcating enzymes with a non-canonical catalytic mechanism. *Frontiers in Microbiology* **13**, 946711. <https://www.frontiersin.org/articles/10.3389/fmicb.2022.946711>

Trotter, V. V. *et al*. (2023). Large-scale genetic characterization of the model sulfate-reducing bacterium, *Desulfovibrio vulgaris* Hildenborough. *Frontiers in Microbiology* **14**, 1095191. <https://www.frontiersin.org/articles/10.3389/fmicb.2023.1095191>

Woodard, T. L. *et al*. (2023). H2 is a major intermediate in *Desulfovibrio vulgaris* corrosion of iron. *mBio* **14**(2), e00076-23. <https://journals.asm.org/doi/abs/10.1128/mbio.00076-23>

Yang, S. *et al*. (2023). A novel sulfate-reducing and nitrogen-fixing bacterium *Fundidesulfovibrio soli* sp. nov., isolated from paddy soils. *Archives of Microbiology* **205**(3), 80. <https://doi.org/10.1007/s00203-023-03412-3>

**Methanogenesis**

Dent, M. R. *et al*. (2023). Carbon monoxide-sensing transcription factors: Regulators of microbial carbon monoxide oxidation pathway gene expression. *Journal of Bacteriology* **205**(5), e00332-22. <https://journals.asm.org/doi/abs/10.1128/jb.00332-22>

Gu, W. *et al*. (2022). Growth rate-dependent coordination of catabolism and anabolism in the archaeon *Methanococcus maripaludis* under phosphate limitation. *The ISME Journal* **16**(10), 2313-2319. <https://doi.org/10.1038/s41396-022-01278-9>

Kang, S. W. *et al*. (2023). Asymmetric ene-reduction by F420-dependent oxidoreductases B (FDOR-B) from *Mycobacterium smegmatis*. *ChemBioChem* **24**(8), e202300195. <https://doi.org/10.1002/cbic.202300195>

Mesquita, C. P. B. d. *et al*. (2023). Methyl-based methanogenesis: An ecological and genomic review. *Microbiology & Molecular Biology Reviews* **87**(1), e00024-22. <https://journals.asm.org/doi/abs/10.1128/mmbr.00024-22>

Prakash, O. *et al*. (2023). Proposed minimal standards for description of methanogenic archaea. *International Journal of Systematic & Evolutionary Microbiology* **73**(4), 0.005500. <https://doi.org/10.1099/ijsem.0.005500>

Wu, H.-H. *et al*. (2022). The pathway for coenzyme M biosynthesis in bacteria. *Proceedings of the National Academy of Sciences of the USA* **119**(36), e2207190119. <https://www.pnas.org/doi/abs/10.1073/pnas.2207190119>

**Homoacetogenesis**

Biester, A. *et al*. (2022). Structural insights into microbial one-carbon metabolic enzymes Ni–Fe–S-dependent carbon monoxide dehydrogenases and acetyl-CoA synthases. *Biochemistry* **61**(24), 2797-2805. <https://doi.org/10.1021/acs.biochem.2c00425>

Dent, M. R. *et al*. (2023). Carbon monoxide-sensing transcription factors: Regulators of microbial carbon monoxide oxidation pathway gene expression. *Journal of Bacteriology* **205**(5), e00332-22. <https://journals.asm.org/doi/abs/10.1128/jb.00332-22>

Frolov, E. N. *et al*. (2023). Obligate autotrophy at the thermodynamic limit of life in a new acetogenic bacterium. *Frontiers in Microbiology* **14**, 1185739. <https://www.frontiersin.org/articles/10.3389/fmicb.2023.1185739>

Hogendoorn, C. *et al*. (2023). “*Candidatus* Hydrogenisulfobacillus filiaventi” strain R50 gen. nov. sp. nov., a highly efficient producer of extracellular organic compounds from H2 and CO2. *Frontiers in Microbiology* **14**, 1151097. <https://www.frontiersin.org/articles/10.3389/fmicb.2023.1151097>

Imaura, Y. *et al*. (2023). Isolation, genomic sequence and physiological characterization of *Parageobacillus* sp. G301, an isolate capable of both hydrogenogenic and aerobic carbon monoxide oxidation. *Applied & Environmental Microbiology* **89**(6), e00185-23. <https://journals.asm.org/doi/abs/10.1128/aem.00185-23>

Kwon, S. J. *et al*. (2022). Metabolic changes of the acetogen *Clostridium* sp. AWRP through adaptation to acetate challenge. *Frontiers in Microbiology* **13**, 982442. <https://www.frontiersin.org/articles/10.3389/fmicb.2022.982442>

Nwaokorie, U. J. *et al*. (2023). Deletion of genes linked to the C1-fixing gene cluster affects growth, by-products, and proteome of *Clostridium autoethanogenum*. *Frontiers in Bioengineering & Biotechnology* **11**, 1167892. <https://www.frontiersin.org/articles/10.3389/fbioe.2023.1167892>

Shin, J. *et al*. (2023). Genome-wide CRISPRi screen identifies enhanced autolithotrophic phenotypes in acetogenic bacterium *Eubacterium limosum*. *Proceedings of the National Academy of Sciences of the USA* **120**(6), e2216244120. <https://www.pnas.org/doi/abs/10.1073/pnas.2216244120>

**Organohalide respiration**

Cui, Y. *et al*. (2023). *Dehalogenimonas etheniformans* sp. nov., a formate-oxidizing, organohalide-respiring bacterium isolated from grape pomace. *International Journal of Systematic & Evolutionary Microbiology* **73**(5): 0.005881. <https://doi.org/10.1099/ijsem.0.005881>

Hu, T. *et al*. (2023). Wide distribution of extracellular electron transfer functionality in natural proteinaceous organic materials for microbial reductive dehalogenation. *Journal of Bioscience & Bioengineering* **135**(3), 238-249. <https://doi.org/10.1016/j.jbiosc.2022.12.003>

Jin, B. *et al*. (2023). Substantial defluorination of polychlorofluorocarboxylic acids triggered by anaerobic microbial hydrolytic dechlorination. *Nature Water* **1**(5), 451-461. <https://doi.org/10.1038/s44221-023-00077-6>

Kozyryev, A. *et al*. (2023). Substrate electronics dominate the rate of reductive dehalogenation promoted by the flavin-dependent iodotyrosine deiodinase. *Biochemistry* **62**(7), 1298-1306. <https://doi.org/10.1021/acs.biochem.3c00041>

Phillips, E. *et al*. (2022). Investigation of active site amino acid influence on carbon and chlorine isotope fractionation during reductive dechlorination. *FEMS Microbiology Ecology* **98**(8), fiac072. <https://doi.org/10.1093/femsec/fiac072>

Su, X. *et al*. (2023). Resuscitation-promoting factor accelerates enrichment of highly active tetrachloroethene/polychlorinated biphenyl-dechlorinating cultures. *Applied & Environmental Microbiology* **89**(1), e01951-22.

Zhang, C. *et al*. (2022). Organohalide respiration potential in marine sediments from Aarhus Bay. *FEMS Microbiology Ecology* **98**(8), fiac073. <https://doi.org/10.1093/femsec/fiac073>

**Anaerobic respiration on miscellaneous electron acceptors**

Jin, H. *et al*. (2022). Anaerobic biohydrogenation of isoprene by *Acetobacterium wieringae* strain Y. *mBio* **13**(6), e02086-22. <https://journals.asm.org/doi/abs/10.1128/mbio.02086-22>

Sasamura, S. *et al*. (2023). Iodate respiration by *Azoarcus* sp. DN11 and its potential use for removal of radioiodine from contaminated aquifers. *Frontiers in Microbiology* **14**,1162788. <https://www.frontiersin.org/articles/10.3389/fmicb.2023.1162788>

Wang, Y. *et al*. (2022). Bromate reduction by *Shewanella oneidensis* MR-1 is mediated by dimethylsulfoxide reductase. *Frontiers in Microbiology* **13**, 955249. <https://www.frontiersin.org/articles/10.3389/fmicb.2022.955249>

**Syntrophic associations**

Fu, J. Y. *et al*. (2022). Dynamic acylome reveals metabolite driven modifications in *Syntrophomonas wolfei*. *Frontiers in Microbiology* **13**: 1018220. <https://www.frontiersin.org/articles/10.3389/fmicb.2022.1018220>

Jin, Y. & Lu, Y. (2023). Syntrophic propionate oxidation: One of the rate-Limiting steps of organic matter decomposition in anoxic environments. *Applied & Environmental Microbiology* **89**(5), e00384-23. <https://journals.asm.org/doi/abs/10.1128/aem.00384-23>

Sun, M. *et al*. (2022). Novel long-chain fatty acid (LCFA)-degrading bacteria and pathways in anaerobic digestion promoted by hydrochar as revealed by genome-centric metatranscriptomics analysis. *Applied & Environmental Microbiology* **88**(16), e01042-22. <https://journals.asm.org/doi/abs/10.1128/aem.01042-22>

**Oxidation of hydrocarbons under anaerobic conditions**

Wegener, G. *et al*. (2022). Anaerobic degradation of alkanes by marine archaea. *Annual Review of Microbiology* **76**, 553-577. <https://www.annualreviews.org/doi/abs/10.1146/annurev-micro-111021-045911>

**Methane oxidation under anaerobic conditions**

Benito Merino, D. *et al*. (2022). Deep-branching ANME-1c archaea grow at the upper temperature limit of anaerobic oxidation of methane. *Frontiers in Microbiology* **13**, 988871. <https://www.frontiersin.org/articles/10.3389/fmicb.2022.988871>

Laso-Pérez, R. *et al*. (2023). Evolutionary diversification of methanotrophic ANME-1 archaea and their expansive virome. *Nature Microbiology* **8**(2), 231-245. <https://doi.org/10.1038/s41564-022-01297-4>

Li, B. *et al*. (2023). Iron oxides act as an alternative electron acceptor for aerobic methanotrophs in anoxic lake sediments. *Water Research* **234**, 119833. <https://doi.org/10.1016/j.watres.2023.119833>

McIlroy, S. J. *et al*. (2023). Anaerobic methanotroph ‘*Candidatus* Methanoperedens nitroreducens’ has a pleomorphic life cycle. *Nature Microbiology* **8**(2), 321-331. <https://doi.org/10.1038/s41564-022-01292-9>

Ouboter, H. T. *et al*. (2023). Acetate and acetyl-CoA metabolism of ANME-2 anaerobic archaeal methanotrophs. *Applied & Environmental Microbiology* **89**(6), e00367-23. <https://journals.asm.org/doi/abs/10.1128/aem.00367-23>

Su, G. *et al*. (2023). Water column dynamics control nitrite-dependent anaerobic methane oxidation by *Candidatus* “Methylomirabilis” in stratified lake basins. *The ISME Journal* **17**(5), 693-702. <https://doi.org/10.1038/s41396-023-01382-4>

Yang, Y. *et al*. (2022). Response of potential activity, abundance and community composition of nitrite-dependent anaerobic methanotrophs to long-term fertilization in paddy soils. *Environmental Microbiology* **24**(11), 5005-5018. <https://doi.org/10.1111/1462-2920.16102>

**Degradation of xenobiotics under anaerobic conditions**

Sanz, D. & Díaz, E. (2022). Genetic characterization of the cyclohexane carboxylate degradation pathway in the denitrifying bacterium *Aromatoleum* sp. CIB. *Environmental Microbiology* **24**(11), 4987-5004. <https://doi.org/10.1111/1462-2920.16093>