

PUBLICATIONS (as of September 2020)1) Papers in refereed Journals

- Ott, J.A., Novak, R., Schiemer, F., Hentschel, U., Nebelsick, M., **Polz, M.** (1991). Tackling the sulfide gradient: a novel strategy involving marine nematodes and chemoautotrophic ectosymbionts. *P.S.Z.N. I: Marine Ecology* **12**: 1-12.
- Polz, M.F.**, Felbeck, H., Novak, R., Nebelsick, M., Ott, J.A. (1992). Chemoautotrophic, sulfur-oxidizing symbiotic bacteria on marine nematodes: morphological and biochemical characterization. *Microb. Ecol.* **24**: 313-329.
- Polz, M.F.**, Distel, D.L., Zarda, B., Amann, R., Felbeck, H., Ott, J.A., Cavanaugh, C.M. (1994). Phylogenetic analysis of a highly specific association between ectosymbiotic, sulfur-oxidizing bacteria and a marine nematode. *Appl. Environ. Microbiol.* **60(12)**: 4461-4467.
- Polz, M.F.**, Cavanaugh, C.M. (1995). Dominance of one bacterial phylotype at a Mid Atlantic Ridge hydrothermal vent site. *Proc. Natl. Acad. Sci. USA* **92**: 7232-7236.
- Polz, M.F.**, Cavanaugh, C.M. (1996). Phylogenetic relationships of the filamentous sulfur-bacterium *Thiothrix ramosa* based on 16S rRNA sequence analysis. *Int. J. Syst. Bacteriol.* **46(1)**: 94-96.
- Polz, M. F.**, Cavanaugh, C.M. (1996). Ecology of ectosymbiosis at a Mid Atlantic Ridge hydrothermal vent site. *in* Uibilein, F., Ott, J., Stachowitsch, M. (Eds): Deep-sea and extreme shallow water habitats: affinities and adaptations. *Biosystematics and Ecology Series No. 11*: 337-352.
- Polz, M.F.**, Cavanaugh, C.M. (1997). A simple method for the quantification of not-yet cultivated microorganisms in the environment based on *in vitro* transcription of 16S rRNA. *Appl. Environ. Microbiol.* **63(3)**: 1028-1033.
- Van Dover, C.L., **Polz, M.F.**, Robinson, J., Cavanaugh, C., Kadko, D., Hickey, J. P. (1997). Predatory anemones at TAG. *BRIDGE* **12**: 33-34.
- Tay, S.T.-L., Hemond, H.F., **Polz, M.F.**, Cavanaugh, C.M., Krumholz, L.R. (1998). Characterization of two Toluene degrading mycobacterial isolates from a contaminated freshwater stream. *Appl. Environ. Microbiol.* **64(5)**: 1715-1720.
- Polz, M.F.**, Cavanaugh, C.M. (1998). Bias in template-to-product ratios in multi-template PCR. *Appl. Environ. Microbiol.* **64(10)**: 3724-3730.
- Polz, M.F.**, Robinson, J., Cavanaugh, C.M., VanDover, C.L. (1998). Trophic ecology of the massive aggregations of the hydrothermal vent shrimp *Rimicaris exoculata*. *Limnol. Oceanogr.* **43**:1631-1638.
- Robinson, J.J., **Polz, M.F.**, Fiala-Medioni, A., Cavanaugh, C.M. (1998). Physiological and immunological evidence for two distinct C1-utilizing pathways in a dual endosymbiotic mussel (family Mytilidae) from the Mid-Atlantic Ridge. *Mar. Biol.* **132**:625-633.
- Tay, S.T.-L., Hemond, H.F., **Polz, M. F.**, Cavanaugh, C.M., Krumholz, L.R. (1999). Importance of *Xanthobacter autotrophicus* in toluene biodegradation within a contaminated stream. *Syst. Appl. Microbiol.* **22**: 113-118.
- Polz, M.F.**, Harbison, C., Cavanaugh, C.M. (1999). Diversity and heterogeneity of epibiotic bacterial communities on the marine nematode *Eubostricus dianae*. *Appl Environ. Microbiol.* **65(9)**:4271-4275.
- Giribet, G., Distel, D. L., **Polz, M. F.**, Sterrer, W., Wheeler, W. C. (2000). Triploblastic relationships with emphasis on the position of Gnathostomulida, Cyclophora, Plathelminthes, and Chaetognatha; a combined approach of 18S rDNA sequences and morphology. *Syst. Biol.* **49(3)**:539-562.

- Tay, S.T.-L., Hemond, H.F., Cavanaugh, C.M., Krumholz, L.R., **Polz, M.F.** (2001). Population dynamics of toluene degrading bacterial species in a contaminated stream assessed by quantitative PCR. *Microb. Ecol.* **41**:124-131.
- Kuai, L., Nair, A., **Polz, M.F.** (2001). A rapid and simple MPN technique for the enumeration of dissimilatory arsenic reducing bacteria. *Appl Environ. Microbiol.* **67**(7):3168-3173.
- Lim, E., Tomita, A., Thilly, W., **Polz, M.F.** (2001) Combination of competitive quantitative PCR and constant denaturant capillary electrophoresis for high resolution detection and enumeration of microbial cells. *Appl. Environ. Microbiol.* **67**(9):3897-3903.
- Thompson, J., Marcelino, L., **Polz, M.F.** (2002) Heteroduplexes in mixed-template amplifications: formation, consequence and elimination by 'reconditioning PCR'. *Nucleic Acids Res.* **30**(9):2083-2088.
- Bertilsson, S., Cavanaugh, C. M., **Polz, M.F.** (2002) Sequencing-independent method to generate oligonucleotide probes targeting a variable region in Bacterial 16S rRNA by PCR with detachable primers. *Appl. Environ. Microbiol.* **68**(11):6077-6086.
- Oates, P.M., Shanahan, P. **Polz, M.F.** (2003) Solar disinfection (SODIS): simulation of solar radiation for global assessment and application for point-of-use water treatment in Haiti. *Water Res.* **37**:47-54.
- Acinas, S.G., Marcelino, L., Klepac-Ceraj, V., **Polz, M.F.** (2004) Divergence and redundancy of 16S rRNA sequences in genomes with multiple *rrn* operons. *J. Bacteriol.* **186**(9):2629-2635.  
**Faculty of 1000 rating (\*2).**
- Sarma-Rupavtarm, R.B., Ge, Z., Schauer, D.B., Fox, J.G., **Polz, M.F.** (2004) Spatial distribution and stability of the eight microbial species of the Altered Schaedler Flora in the gastrointestinal tract of mice. *Appl. Environ. Microbiol.* **70**(5):2791-2800.
- Klepac-Ceraj, V. Bahr, M., Crumb, B., Teske, A., Hobbie, J., **Polz, M.F.** (2004) High overall diversity and dominance of microdiverse relationships in salt marsh sulfate-reducing bacteria. *Environ. Microbiol.* **6**(7):686-698.
- Thompson, J.R., Randa, M.A., Marcelino, L.A., Tomita, A., Lim, E., **Polz, M.F.** (2004) Diversity and dynamics of a North Atlantic coastal *Vibrio* community. *Appl. Environ. Microbiol.* **70**(7):4103-4110.
- Acinas\*, S.G., Klepac-Ceraj\*, V., Hunt, D.E., Pharino, C., Ceraj, I., Distel, D.L., **Polz, M.F.** (2004) Fine-scale phylogenetic architecture of a complex bacterial community. *Nature.* **430**:551-554.  
\*co-first authors  
**Faculty of 1000 rating (\*2). Featured in News and Views, Nature Vol. 430, 29 July 2004.**
- Randa, M.A., **Polz, M.F.**, Lim, E. (2004) Population dynamics of *Vibrio vulnificus* in a North Atlantic estuary. *Appl. Environ. Microbiol.* **70**(9):5469-5476.
- Oates, P.M., Castenson, C., Harvey, C.F., **Polz, M.F.**, Culligan, P. (2005) Illuminating reactive microbial transport in saturated porous media: Demonstration of a visualization method and conceptual transport model. *J. Contam. Hydrol.* **77**(4):233-245.
- Thompson, J.R., Pacocha, S., Pharino, C., Klepac-Ceraj, V., Hunt, D.E., Benoit, J., Sarma-Rupavtarm, R., Distel, D.L., **Polz, M.F.** (2005) Genotypic diversity within a natural coastal bacterioplankton community. *Science.* **307**:1311-1313.  
**Faculty of 1000 rating (\*2).**
- Perry, T.D., Klepac-Ceraj, V., Zhang, X.V., McNamara, C.J., **Polz, M.F.**, Martin, S.T., Berke, N., Mitchell, R. (2005) Bacterial exopolymer and humic acid binding to calcite. *Environ. Sci. Technol.* **39**:8770-8775.

- Acinas, S.G, Sarma-Rupavtarm, R., Klepac-Ceraj, V., **Polz, M.F.** (2005) PCR induced sequence artifacts and bias: insights from two 16S rRNA clone libraries constructed from the same sample. *Appl. Environ. Microbiol.* **71(12)**:8966-8969.  
**Faculty of 1000 rating (\*1).**
- Luyten, Y.A., Thompson, J.R., **Polz, M.F.**, Distel, D.L. (2006) Symbiont community composition varies among members of a single host population of the wood-boring bivalve *Lyrodus pedicellatus* (Bivalvia: Teredinidae). *Appl. Environ. Microbiol.* **72(1)**:412-417.
- Klepac-Ceraj, V., Ceraj, I., **Polz, M.F.** (2006) CLUSTERER: extendable java application for sequence grouping and cluster analyses. *Online J. Bioinf.* **7(1)**:15-21.
- Hunt, D.E., Klepac-Ceraj, V., Acinas, S.G., Gauthier, C., Bertilsson, S., **Polz, M.F.** (2006) Evaluation of 23S rRNA PCR Primers for use in Phylogenetic Studies of Bacterial Diversity. *Appl. Environ. Microbiol.* **72(3)**:2221-2225.
- Ge, Z., Feng, Y., Taylor, N., Ohtani, M., **Polz, M.F.**, Schauer, D.B., Fox, J.G. (2006) Colonization of Altered Schaedler Flora is influenced by gender, aging and *Helicobacter hepaticus* infection in the intestine of Swiss Webster mice. *Appl. Environ. Microbiol.* **72(7)**:5100-5103.
- Marcelino, L., Backman, V., Donaldson, A., Steadman, C., Thompson, J.R., Paccocha-Preheim, S., Lien, C., Lim, E., Veneziano, D., **Polz, M.F.** (2006) Accurate identification of low abundant targets amidst similar sequences by revealing hidden correlations in oligonucleotide microarray data. *Proc. Natl. Acad. Sci. USA* **103(37)**:13629-13634.
- Polz, M.F.**, Hunt, D.E., Preheim, S.P., Weinreich, D.M. (2006) Patterns and mechanisms of genetic and phenotypic differentiation in marine microbes. *Phil. Trans. R. Soc. Lond. B.* **361**:2009-2021.
- Sabehi, G. Kirkup, B. C., Rozenberg, M., Stambler, N., **Polz, M.F.**, Beja, O. (2007) Niche adaptation and spectral tuning in marine proteorhodopsins. *ISME Journal.* **1(1)**:48-55.  
*Featured in Research Highlights, Nature Reviews in Microbiology, Vol. 5, June 2007.*
- Hunt, D. E., Gevers, D., Vahora, N. M., **Polz, M. F.** (2008) Conservation of the chitin utilization pathway in the Vibrionaceae. *Appl. Environ. Microbiol.* **74(1)**:44-51.
- Stocker, R, Seymour, J. R., Samadani, A., Hunt, D. E., **Polz, M. F.** (2008) Rapid chemotactic response enables marine bacteria to exploit ephemeral microscale nutrient patches. *Proc. Natl. Acad. Sci. USA* **105(11)**:4209-4214.  
*Stocker received 2010 ASLO Lindeman award for paper.*
- Hunt\*, D. E., Lawrence\*, A. D., Gevers, D., Preheim, S., Alm<sup>&</sup>, E. J., **Polz<sup>&</sup>, M. F.** (2008) Resource partitioning and sympatric differentiation among closely related bacterioplankton. *Science.* **320**:1081-1085.  
\*co-first authors; <sup>&</sup> co-corresponding authors
- Le Roux, F., Zouine, M., Chakroun, N., Binesse, J., Saulnier, D., Bouchier, C., Zidane, N., Ma, L., Rusniok, C., Lajus, A., Buchrieser, C., Médigue, C., **Polz, M. F.**, Mazel, D. (2009) Genome sequence of *Vibrio splendidus*: an abundant marine species with a large genotypic diversity. *Environ. Microbiol.* **11(8)**:1959-1970.
- Joss M. J., Koenig, J., Labbate, M., **Polz, M. F.**, Gillings, M. R., Stokes, H. W., Doolittle, W. F., Boucher, Y. (2009) ACID: annotation of cassette and integron data. *BMC Bioinformatics* **10**:118.
- Man-Aharonovich, D., Tzahor, S., Kirkup, B.C., Yogev, T., Berman-Frank, I., **Polz, M.F.**, Béjà, O., Mandel-Gutfreund, Y. (2009) A supervised learning approach for taxonomic classification of core-photosystem-II genes and transcripts in the marine environment. *BMC Genomics* **10**:229.
- Man-Aharonovich, D., Philosofof, A., Kirkup, B.C., Le Gall, F., Yogev, T., Berman-Frank, I., **Polz, M.F.**, Vaulot, D., Béjà, O. (2010) Diversity of active marine picoeukaryotes in the eastern

- Mediterranean Sea unveiled using photosystem-II *psbA* transcripts. ISME J. **4(8)**:1044-1052.
- Kirkup, B.C., Chang, L.A., Chang, S., Gevers, D., **Polz, M.F.** (2010) *Vibrio* chromosomes share common history. BMC Microbiol. **10**:137.
- Wildschutte, H., Preheim, S.P., Hernandez, Y., **Polz, M.F.** (2010) O-antigen hyper-variability and lateral gene transfer of the *wbe* region among *Vibrio splendidus*. Environ. Microbiol. **12(11)**:2977-2987.
- Preheim, S.P., Boucher, Y., Wildschutte, H., David, L.A., Veneziano, D., Alm, E.J., **Polz, M.F.** (2011) Metapopulation structure of *Vibrionaceae* among coastal marine invertebrates. Environ. Microbiol. **13(1)**:265-275.
- Wang, L., Chen, S., Vergin, K.L., Giovannoni, S.J., Chan, W., Demott, M.S., Taghzadeh, K., Cutler, M., Timberlake, S., Alm, E.J., **Polz, M.F.**, Pinhassi, J., Deng, Z., Dedon, P.C. (2011) DNA phosphorothioation is ubiquitous feature of bacterial genomes. Proc. Natl. Acad. Sci. USA. **108(7)**:2963-2968.
- John, S.G., Mendez, C.B., Deng, L., Poulos, B. Kauffman, A.K.M., Kern, Z., Brum, J., **Polz, M.F.**, Boyle, E.A., Sullivan, M.B. (2011) A simple and efficient method for concentration of ocean viruses using chemical flocculation. Environ. Microbiol. Reports. **3(2)**:195-202.
- Boucher, Y., Cordero, O.X., Takemura, A., Hunt, D.E., Schliep, K., Bapteste, E., Lopez, P., Tarr, C.L., **Polz, M.F.** (2011) Local mobile gene pools rapidly cross species boundaries to create endemicity within global *Vibrio cholerae* populations. mBio. **2(2)**: pii: e00335-10
- Preheim, S.P., Timberlake, S., **Polz, M.F.** (2011) Merging taxonomy with ecological population prediction: a case study of *Vibrionaceae*. Appl. Environ. Microbiol. **77(20)**:7195-7206.
- Wollenberg, M.S., Preheim, S.P., **Polz, M.F.**, Ruby E.G. (2012) Polyphyly of non-bioluminescent *Vibrio fischeri* sharing a *lux*-locus deletion. Environ. Microbiol. **14(3)**:655-668.
- Xue, H., Xu, Y., Boucher, Y., **Polz, M.F.** (2012) High frequency of a novel filamentous phage, VCYΦ, within an environmental *Vibrio cholerae* population. Appl. Environ. Microbiol. **78(1)**:28-33.
- Shapiro, B.J., Friedman, J., Cordero, O.X., Preheim, S.P., Timberlake, S.C., Szabo, G., **Polz<sup>&</sup>, M.F.**, Alm<sup>&</sup>, E.J. (2012) Population genomics of early events in the ecological differentiation of bacteria. Science **336**:48-51.  
<sup>&</sup> co-corresponding authors  
**Faculty of 1000 rating (\*7). Featured in Perspectives, Science Vol. 336, 6 April 2012, in Research Highlights, Nature Reviews Genetics, Vol. 13, June 2012 and Nature Reviews Microbiology, Vol. 10, June 2012, in Microbe, Vol 7, September 2012.**
- Materna, A., Friedman, F., Bauer, C., Cruz, C., Chen, S., Huang, I., Gillens, A., Clarke, S., **Polz, M.F.**, Alm, E. (2012) Shape and evolution of the fundamental niche in marine bacteria. ISME J. **6(12)**:2168-2177.
- Cordero\*, O.X., Wildschutte\*, H., Kirkup\*, B., Proehl, S., Ngo, L., Hussain, F., Le Roux, F., Mincer, T., **Polz, M.F.** (2012) Ecological populations of bacteria act as socially cohesive units of antibiotic production and resistance. Science. **337**:1228-1231.  
\*co-first authors  
**Faculty of 1000 rating (\*2). Featured in Perspective, Science, Vol. 337, 7 September 2012, in Research Highlights, Nature Vol. 489, 12 September 2012.**
- Cordero, O.X., Ventouras, L.-A., DeLong, E.F., **Polz, M.F.** (2012) Public good dynamics drive evolution of iron acquisition strategies in natural bacterioplankton populations. Proc. Natl. Acad. Sci. USA. **109(49)**:20059-20064.
- Szabo, G., Preheim, S.P., Kauffman, K.M., David, L.A., Shapiro, J., Alm, E.J., **Polz, M.F.** (2013) Reproducibility of *Vibrionaceae* population structure in coastal bacterioplankton. ISME J. **7(3)**:509-519.

- Goudenege, D., Labreuche, Y., Krin, E., Ansquer, D., Mangenot, S., Calteu, A., Médigue, C., Mazel, D., **Polz, M.F.**, Le Roux, F. (2013) Comparative genomics of pathogenic lineages of *Vibrio nigripulchritudo* identifies virulence associated traits. *ISME J.* **7(10)**:1985-1996.
- Yawata, Y., Cordero, O.X., Menolascina, F., Hehemann, J.-H., **Polz, M.F.**, Stocker, R. (2014) A competition dispersal trade-off ecologically differentiates recently speciated marine bacterioplankton populations. *Proc. Natl. Acad. Sci. USA.* **111(15)**:5622-5627.  
**Faculty of 1000 rating (\*1).**
- Jagtap, S.S., Hehemann, J.-H., **Polz, M.F.**, Lee, J.K., Zhao, H. (2014) Comparative biochemical characterization of three exolytic oligoalginate lyases from *Vibrio splendidus* revealed complementary substrate scope, temperature and pH adaptations. *Appl. Environ. Microbiol.* **80(14)**:4207-4214.
- Kirchberger, P.C., Turnsek, M., Hunt, D.E., Haley, B.J., Colwell, R.R., Tarr, C.L., **Polz, M.F.**, Boucher, Y. (2014) *Vibrio metecus* sp. nov., a close relative of *Vibrio cholerae* isolated from coastal brackish ponds and clinical specimens. *Int. J. Syst. Evol. Microbiol.* **64**:3208-3214.
- Xue, H., Cordero, O.X., Camas, F.M., Trimble, W., Meyer, F., Guglielmini, J., Rocha, E.P.C., **Polz, M.F.** (2015) Eco-evolutionary dynamics of episomes among ecologically-cohesive bacterial populations. *mBio* **6(3)**:e00552-15.
- Klose, J., **Polz, M.F.**, Wagner, M., Schimak, M., Gollner, S., Bright, M. (2015) Endosymbionts escape dead hydrothermal tubeworms to enrich the free-living population. *Proc. Natl. Acad. Sci. USA* **112(36)**:11300-11305.
- Bongrand, C., Koch, E.J., Moriano-Gutierrez, S., Cordero, O.X., McFall-Ngai, M., **Polz, M.F.**, Ruby, E.F. (2016) A comparison of 13 *Vibrio* fisheri isolates in the perspective of their symbiotic ecology. *ISME J.* **10(12)**:2907-2917.
- Datta, M.S., Sliwerska, E., Gore, J., **Polz, M.F.**, Cordero, O.X. (2016) Microbial interactions lead to rapid micro-scale successions on model marine particles. *Nature Comm.* **7**:11965
- Perez-Carrascal, O.M., Vaninsberghe, D., Juárez, S., **Polz, M.F.**, Vinuesa, P., González, V. (2016) Population genomics of the symbiotic plasmids of nitrogen-fixing *Rhizobium* species co-existing in association with *Phaesolus vulgaris*. *Environ. Microbiol.* **18(8)**:2660-2676.
- Hehemann, J.-H., Arevalo, P., Datta, M.S., Yu, A., Corzett, C., Henschel, A., Preheim, S.P., Timberlake, S., Alm, E.J., **Polz, M.F.** (2016) Adaptive radiation by waves of gene transfer leads to fine-scale resource partitioning in marine microbes. *Nature Comm.* **7**:12860  
**Featured in Curr. Biol. Vol. 26, Nov. 21 2016.**
- Kirchberger, P.C., Orata, F.D., Barlow, E.J., Kauffman, K.M., Case, R.J., **Polz, M.F.**, Boucher, Y. (2016) A small number of phylogenetically distinct clonal complexes dominate a coastal *Vibrio cholerae* population. *Appl. Environ. Microbiol.* **82(18)**:5576-5586.
- Chase, A.B., Arevalo, P., **Polz, M.F.**, Berlemont, R., Martiny, J.B.H. (2016) Evidence for ecological flexibility in the cosmopolitan genus *Curtobacterium*. *Front. Microbiol.* **7**:1874.
- Cermak, N., Becker, J.W., Knudsen, S.M., Chisholm, S.W., Manalis, S.R., **Polz, M.F.** (2017) Direct single-cell biomass estimation for marine bacteria using Archimedes' principle. *ISME J.* **11(3)**:825-828.
- Bruto, M., James, A., Petton, B., Labreuche, Y., Chenivresse, S., Bruscia, M.A., **Polz, M.F.\***, Le Roux, F.\* (2017) *Vibrio crassostreae*, a benign oyster colonizer turned into a pathogen after plasmid acquisition. *ISME J.* **11(4)**:1043-1052.  
\* co-corresponding authors
- Alcamán, M.E., Alcorta, J., Bergman, B., Vásquez, M., **Polz, M.**, Diez, B. (2017) Physiological and gene expression responses to nitrogen regimes and temperatures in *Mastigocladus* sp. strain CHP1, a predominant thermotolerant cyanobacterium of hot springs. *Syst. Appl. Microbiol.* **40(2)**:102-113.

- Mino, S., Nakagawa, S., Makita, H., Toki, T., Miyazaki, J., Sievert, S.M., **Polz, M.F.**, Inagaki, F., Godfroy, A., Kato, S., Watanabe, H., Nunoura, T., Nakamura, K., Imachi, H., Watsuji, T.O., Kojima, S., Takai, K., Sawabe, T. (2017) Endemicity of the cosmopolitan mesophilic chemolithoautotroph *Sulfurimonas* at deep-sea hydrothermal vents. *ISME J.* **11(4)**:909-919.
- Staranawski, P., Bataillon, T., Jochum, L.M., Fernández Cáceres, E., Schreiber, L., Chen, X., Ettema, J.G., Lever, M.A., **Polz, M.F.**, Jørgensen, B.B., Schramm, A., Kjeldsen, K.U. (2017) Microbial community assembly and evolution in seafloor sediment. *Proc. Natl. Acad. Sci. USA.* **114(11)**:2940-2945.
- Chu, N.D., Clarke, S.A., Timberlake, S., **Polz, M.F.**, Grossman, A.D., Alm, E.J. (2017) A mobile element in *mutS* drives hypermutation in marine *Vibrio*. *mBio* **8(1)**:e02045-16
- Becker, S., Scheffel, A., **Polz, M.F.**, Hehemann, J.H. (2017) Accurate quantification of laminarin in marine organic matter with enzymes from marine microbes. *Appl. Environ. Microbiol.* **83(9)**:e03389-16
- Takemura, A.F., Corzett, C.H., Hussain, F., Arevalo, P., Datta, M., Yu, X., Le Roux, F., **Polz, M.F.** (2017) Natural resource landscapes of a marine bacterium reveal distinct fitness-determining genes across the genome. *Environ. Microbiol.* **19(6)**:2422-2433
- Badur, A.H., Plutz, M.J., Yalamanchili, G., Jagtap, S.S., Schweder, T., Unfried, F., Markert, S., **Polz, M.F.**, Hehemann, J.-H., Rao, C.V. (2017) Exploiting fine-scale genetic and physiological variation of closely related microbes to reveal unknown enzyme function. *J. Biol. Chem.* **292(31)**:13056-13067
- Kauffman, K.M., Hussain, F.A., Yang, J., Arevalo, P., Brown, J.M., Chang, W.K., Vaninsberghe, D., Elsherbini, J., Cutler, M.B., Kelly, L., **Polz, M.F.** (2018) A major lineage of non-tailed dsDNA viruses as unrecognized killers of marine bacteria. *Nature* **554(7690)**:118-122. **Faculty of 1000 rating (\*2). Featured in News and Views, Nature Vol. 554, 24 January 2018 and many news outlets, including Boston Globe and many other news outlets across the world.**
- Martin-Platero, A., Cleary, B., Kauffman, K.M., Preheim, S.P., McGillicuddy, D.J., Alm, E.J., **Polz, M.F.** (2018) High resolution time series reveals cohesive but short-lived communities in coastal plankton. *Nature Comm.* **9(1)**:266.
- Kauffman, K.M., **Polz, M.F.** (2018) Streamlining standard bacteriophage methods for higher throughput. *MethodsX* **5**:159-172
- Datta, M.S., Almada, A.A., Baumgartner, M., Mincer, T.J., Tarrant, A.M., **Polz, M.F.** (2018) Inter-individual variability in copepod microbiomes reveals bacterial networks linked to host physiology. *ISME J.* **12(9)**:2103-2113.
- Corzett, C.H., Elsherbini, J., Chien, D.M., Hehemann, J.-H., Henschel, A., Preheim, S.P., Yu, X., Alm, E.J., **Polz, M.F.** (2018) Evolution of a vegetarian *Vibrio*: metabolic specialization of *V. breoganii* to macroalgal substrates. *J. Bacteriol.* **200(15)**:e00020-18.
- Kauffman, K.M., Brown, J.M., Sharma, R.S., VanInsberghe, D., Elsherbini, J., **Polz, M.F.**, Kelly, L. (2018) Viruses of the Nahant collection, characterization of 251 marine Vibrionaceae viruses. *Sci. Data.* **5**:180114.
- Castillo, D., Kauffman, K., Hussain, F., Kalatzis, P., Rørbo, N., **Polz, M.**, Middelboe, M. (2018) Widespread distribution of prophage-encoded virulence factors in marine *Vibrio* communities. *Sci. Rep.* **8(1)**:9973.
- Beatriz Fernández-Gómez, B., Díez, B., **Polz, M.**, Arroyo, J.I., Alfaro, F.D., Marchandon, G., Sanhueza, C., Farías, L., Trefault, N., Marquet, P.A., Molina-Montenegro, M.A., Sylvander, P., Snoeijs-Leijonmalm, P. (2018) Bacterial community structure in a sympagic habitat expanding with global warming: brackish ice brine at 85-90 °N. *ISME J.* **13(2)**:316-333.

- Bruto, M., Labreuche, Y., James, A., Piel, D., Chenivesse, D., Petton, B., **Polz, M.F.\***, LeRoux, F.\* (2018) Ancestral gene acquisition as the key to virulence potential in environmental *Vibrio* populations. *ISME J.* **12(12)**:2954-2966.
- Fuentes, S., Arroyo, J.I., Rodriguez-Marconi, S., Masotti, I. Alarcon-Schumacher, T., **Polz, M.F.**, Trefault, N., de la Iglesia, R., Diez, B. (2019) Summer phyto- and bacterioplankton communities during low and high productivity scenarios in the Antarctic Peninsula. *Polar Biology.* **42(1)**:159-169.
- Polzin, J., Arevalo, P., Nussbaumer, T., **Polz, M.F.**, Bright, M. (2019) Polyclonal symbiont populations in hydrothermal vent tubeworms and the environment. *Proceedings of the Royal Society B: Biological Sciences.* **286(1896)**:20181281.
- Urrejola, C., Alcorta, J., Salas, L., Vasquez, M., Polz, M.F., Vicuña, R., Diez, B. (2019) Genomic features for desiccation tolerance and sugar biosynthesis in the extremophile *Gloeocapsopsis* sp. UTEX B3054. *Frontiers Microbiol.* **10**:Article950
- Yu, X., **Polz, M.F.**, Alm, E.J. (2019) Interactions in self assembled communities saturate with diversity. *ISME J.* **13(6)**:1602-1617.
- Arevalo, P. VanInsberghe, D., Elsherbini, J., Gore, J., **Polz, M.F.** (2019) A reverse ecology approach based on a biological definition of microbial populations. *Cell* **178(4)**:820-834.e14  
**Faculty of 1000 rating (\*2). Featured in Cell Editorial and several news outlets.**
- Chase, A.B., Arevalo, P., Brodie, E.L., **Polz, M.F.**, Karaoz, U., Martiny, J.B.H. (2019) Maintenance of sympatric and allopatric populations in free-living terrestrial bacteria. *mBio* **10(5)**:820-834.
- Kirchberger, P.C., Orata, F.D., Nasreen, T., Kauffman, K.M., Tarr, C.L., Case, R.J., **Polz, M.F.** Boucher, Y. (2020) Culture-independent tracking of *Vibrio cholerae* lineages reveals complex spatiotemporal dynamics in natural populations. *Environ. Microbiol.* **Epub ahead of print.**
- VanInsberghe, D., Varian, B., Erdman, S., **Polz, M.F.** (2019) Diarrheal events can trigger long-term *Clostridium difficile* colonization with recurrent blooms. *Nature Microbiol.* **5(4)**:642-650.
- Bongrand, C., Moriano-Gutierrez, S., Arevalo, P., McFall-Ngai, M., **Polz, M.**, Ruby, E.G., (2020) Using colonization assays and comparative genomics to discover symbiosis behavior and factors in *Vibrio fisheri* *mBio* **11(2)**:e03407-e03410.
- Sichert, A., Corzett, C.H., Schechter, M.S., Unfried, F., Markert, S., Becher, D., Fernandez-Guerra, A., Liebke, M. Schweder, T., **Polz, M.F.**, Hehemann, J.-H. (2020) Verrucomicrobia use hundreds of enzymes to digest the algal polysaccharide fucoidan. *Nature Microbiol.* **5(8)**:1026-1039.
- Yang, J., Fang, W., Miranda-Sanchez, F., Brown, J.M., Kauffman, K.M., Bartel, D.P., **Polz, M.F.\***, Kelly, L.\* (2020) Selective pressure for tRNA acquisition. *Cell Systems.* **Revisions pending.**  
\*co-corresponding authors
- Hussain, F.A., Dubert, J., Esherbini, J., Murphy, M., VanInsberghe, D., Arevalo, P., Kauffman, K., Rodino-Janeiro, B.K., **Polz, M.F.** (2020) Rapid evolutionary turnover of mobile genetic elements drives microbial resistance to phage. *Science.* **Revisions pending.**

## 2) Reviews / Opinions

- Polz, M.F.**, Ott, J.A., Bright, M., Cavanaugh, C.M. (2000) When bacteria hitch a ride. *ASM News.* **66(9)**:531-539.
- Polz, M.F.**, Bertilsson, S., Acinas, S.G., Hunt, D. (2003) A(r)Ray of hope in analysis of function and diversity of microbial communities. *Biol. Bull.* **204**:196-199.

- Stewart, J.R., Gast, R.J., Fujioka, R.S., Solo-Gabriele, H.M., Meschke, J.S., Amaral-Zettler, L.A., Del Castillo, E., **Polz, M.F.**, Collier, T.K., Strom, M.S., Sinigalliano, C.D., Moeller, P.D.R., Holland, A.F. (2008) The coastal environment and human health: Microbial indicators, pathogens, sentinels and reservoirs. *Environ. Health*. **7**:Article Number S3: Suppl. 2
- Fraser, C., Alm, E.J., **Polz, M.F.**, Spratt, B., Hanage, W. (2009) The bacterial species challenge: Making sense of genetic and ecological diversity. *Science*. **323**:741-746.
- Polz, M.F.** (2011) Crystal ball: We need more model systems. *Environ. Microbiol. Reports* **3**(1):18-19.
- Polz, M.F.**, Alm, E.J., Hanage, W.P. (2013) Horizontal gene transfer and the evolution of bacterial and archaeal population structure. *Trends in Genetics*. *Trends Genet.* **29**(3):170-175.
- Cordero, O.X., **Polz, M.F.** (2014) Explaining microbial genomic diversity in light of evolutionary ecology. *Nature Rev. Microbiol.* **12**(4):263-273.  
**Faculty of 1000 rating (\*2).**
- Takemura, A.F., Chien, D.M., **Polz, M.F.** (2014) Associations and dynamics of *Vibrionaceae* in the environment, from the genus to the population level. *Front. Microbiol.* **5**:38: eCollection.
- Shapiro, J., **Polz, M.F.** (2014) Ordering microbial diversity into ecologically and genetically cohesive units. *Trends Microbiol.* **22**(5):235-247.  
**Faculty of 1000 rating (\*4).**
- Thompson, C.C., Amaral, G.R., Campeão, M., Edwards, R.A., **Polz, M.F.**, Dutilh, B.E., Ussery, D.W., Sawabe, T., Swings, J., Thompson, F.L. (2015) Microbial taxonomy in the post-genomics era: rebuilding from scratch? *Arch. Microbiol.* **197**(3):359-370.
- Le Roux, F., Wegner, K.M., **Polz, M.F.** (2016) Oysters and vibrios as a model for disease dynamics in wild animals. *Trends Microbiol.* **24**(7):568-580.
- Polz, M.F.**, Cordero, O.X. (2016) The genomics of metabolic tradeoffs. *Nature Microbiology.* **1**(11):16181.
- Louca, S. **Polz, M.F.**, Mazel, F., Albright, M.B.N., Huber, J., O'Connor, M., Ackermann, M., Hahn, A.S., Crowe, S.A., Hallam, S.J., Doebli, M., Wegener Pafrey, L. (2018) Function and functional redundancy in microbial systems. *Nature Ecol. Evol.* **2**(6):936-943.
- VanInsberghe, D., Arevalo, P., Chien, D., **Polz, M.F.** (2020) How can microbial population genomics inform community ecology? *Phil. Trans. R. Soc. B* **375**:20190253
- Zakem, E.J., **Polz, M.F.**, Follows, M.J. (2020) Redox-informed models of biogeochemical cycles.  
**Submitted.**

### 3) Book Chapters

- Thompson, J.T., Marcelino, L., **Polz, M.F.** (2005) Diversity and sources of human bacterial pathogens and overview of methods of their detection and quantification. In: Shimshon Belkin and Rita Colwell (Eds.), *Ocean and Health: Pathogens in the Marine Environment*. Springer. pp. 29-68.
- Thompson, J.T., **Polz, M.F.** (2006) Dynamics of vibrio populations and their role in environmental nutrient cycling. In: F.L. Thompson, B. Austin, and J. Swings (Eds.), *The Biology of Vibrios*. ASM Press. pp. 190-203
- Polz, M.F.**, Hanage, W.P. (2012) Overview: Quantitative and theoretical microbial population biology. In: E. Rosenberg, E.F. Delong, F. Thompson, S. Lory, E. Stackebrandt (Eds.), *The Prokaryotes*, 4<sup>th</sup> Edition. Springer.
- Shapiro, J., **Polz, M.F.** (2015) Microbial Speciation. In: Howard Ochman (Ed.), *Microbial Evolution*. Cold Spring Harb Perspect Biol **7**(10): pii: a018143



Arevalo, P., VanInsberghe, D., **Polz, M.F.** (2019) A reverse ecology framework for bacteria and archaea. In Polz, M.F., Rajora, O. (Eds.) Microbial Population Genomics. Nature Springer

4) Books

**Polz, M.F.**, Rajora, O. (Eds.) (2019) Microbial Population Genomics. Nature Springer