**Chapter 1**

**General**

Kolter, R. (2021). The history of microbiology—A personal interpretation. *Annual Review of Microbiology* **75**, 1-17. <https://www.annualreviews.org/doi/abs/10.1146/annurev-micro-033020-020648>

Kosmachevskaya, O. V. & Topunov, A. F. (2021). Nonenzymatic reactions in metabolism: Their role in evolution and adaptation. *Applied Biochemistry & Microbiology* **57**(5), 543-555. <https://doi.org/10.1134/S0003683821050100>

**Diversity**

Tahon, G. et al. (2021). Expanding archaeal diversity and phylogeny: Past, present, and future. *Annual Review of Microbiology* **75**, 359-381. <https://www.annualreviews.org/doi/abs/10.1146/annurev-micro-040921-050212>

**Ecology and Geomicrobiology**

**Evolution**

**Genomics**

**Extreme environments**

**Human microbiome**

Alrubaye, H. S. *et al*. (2021). Abundance and compositions of B-vitamin-producing microbes in the mammalian gut vary based on feeding strategies. *mSystems* **6**(4), e00313-21. <https://journals.asm.org/doi/abs/10.1128/mSystems.00313-21>

Bayaga, C. L. T. *et al*. (2021). Culturable micro-organisms in human milk were found to be associated with maternal weight, diet and age during early lactation. *Journal of Applied Microbiology* **131**(2), 925-937. <https://doi.org/10.1111/jam.14974>

Britton, G. J. & Faith, J. J. (2021). Causative microbes in host-microbiome interactions. *Annual Review of Microbiology* **75**, 223-242. <https://www.annualreviews.org/doi/abs/10.1146/annurev-micro-041321-042402>

Cunningham, M. *et al*. (2021). Shaping the future of probiotics and prebiotics. *Trends in Microbiology* **29**(8), 667-685. <https://doi.org/10.1016/j.tim.2021.01.003>

Dey, G. & Mookherjee, S. (2021). Probiotics-targeting new milestones from gut health to mental health. *FEMS Microbiology Letters* **368**(15), fnab096. <https://doi.org/10.1093/femsle/fnab096>

Dwivedi, M. *et al*. (2021). Microbial community in human gut: a therapeutic prospect and implication in health and diseases. *Letters in Applied Microbiology* **73**(5). 553-568. <https://doi.org/10.1111/lam.13549>

Ghosh, S. & Pramanik, S. (2021). Structural diversity, functional aspects and future therapeutic applications of human gut microbiome. *Archives of Microbiology* **203**(9), 5281-5308. <https://doi.org/10.1007/s00203-021-02516-y>

Grieneisen, L. *et al*. (2021). Gut microbiome heritability is nearly universal but environmentally contingent. *Science* **373**(6551), 181-186. <https://science.sciencemag.org/content/sci/373/6551/181.full.pdf>

Griffin, M. E. *et al*. (2021). *Enterococcus* peptidoglycan remodeling promotes checkpoint inhibitor cancer immunotherapy. *Science* **373**(6558), 1040-1046. <https://science.sciencemag.org/content/sci/373/6558/1040.full.pdf>

Gutierrez, M. W. & Arrieta, M.-C. (2021). "The intestinal mycobiome as a determinant of host immune and metabolic health. *Current Opinion in Microbiology* **62**, 8-13. <https://doi.org/10.1016/j.mib.2021.04.004>

Han, S. *et al*. (2021). A metabolomics pipeline for the mechanistic interrogation of the gut microbiome. *Nature* **595**(7867), 415-420. <https://doi.org/10.1038/s41586-021-03707-9>

Hockenberry, A. M. *et al*. (2021). Microbiota-derived metabolites inhibit Salmonella virulent subpopulation development by acting on single-cell behaviors. *Proceedings of the National Academy of Sciences of the USA* **118**(31), e2103027118. <https://www.pnas.org/content/pnas/118/31/e2103027118.full.pdf>

Joly, A., F. Leulier & Vadder, F. De (2021). Microbial modulation of the development and physiology of the enteric nervous system. *Trends in Microbiology* **29**(8), 686-699. <https://doi.org/10.1016/j.tim.2020.11.007>

Karamzin, A. M. *et al*. (2021). *Akkermansia muciniphila* and host interaction within the intestinal tract. *Anaerobe* **72**, 102472. <https://doi.org/10.1016/j.anaerobe.2021.102472>

Lim, M. Y. *et al*. (2021). Gut microbiome structure and association with host factors in a Korean population. *mSystems* **6**(4), e00179-21. <https://journals.asm.org/doi/abs/10.1128/mSystems.00179-21>

Lin, W. *et al*. (2021). Listening in on the conversation between the human gut microbiome and its host. *Current Opinion in Microbiology* **63**, 150-157. <https://doi.org/10.1016/j.mib.2021.07.009>

Liu, X. *et al*. (2021). *Blautia*—a new functional genus with potential probiotic properties? *Gut Microbes* **13**(1), 1875796. <https://doi.org/10.1080/19490976.2021.1875796>

Luis, A. S. *et al*. (2021). A single sulfatase is required to access colonic mucin by a gut bacterium. *Nature* **598**(7880), 332-337. <https://doi.org/10.1038/s41586-021-03967-5>

Ma, Z. (2021). Evaluating the assembly dynamics in the human vaginal microbiomes with niche-neutral hybrid modeling. *Frontiers in Microbiology* **12**, 2233. <https://www.frontiersin.org/article/10.3389/fmicb.2021.699939>

Malmuthuge, N. & Guan, L. L. (2021). Noncoding RNAs: Regulatory molecules of host-microbiome crosstalk. *Trends in Microbiology* **29**(8), 713-724. <https://doi.org/10.1016/j.tim.2020.12.003>

Mancabelli, L. *et al*. (2021). Vaginotypes of the human vaginal microbiome*. Environmental Microbiology* **23**(3), 1780-1792. <https://doi.org/10.1111/1462-2920.15441>

Muller, E. *et al*. (2021). A meta-analysis study of the robustness and universality of gut microbiome-metabolome associations. *Microbiome* **9**(1), 203. <https://doi.org/10.1186/s40168-021-01149-z>

Nguyen, Q. P. *et al*. (2021). Associations between the gut microbiome and metabolome in early life. *BMC Microbiology* **21**, 238. <https://doi.org/10.1186/s12866-021-02282-3>

Price, C. E. *et al*. (2021). The gut-lung axis in cystic fibrosis. *Journal of Bacteriology* **203**(20), e00311-21. <https://journals.asm.org/doi/abs/10.1128/JB.00311-21>

Shin, J. *et al*. (2021). Ageing and rejuvenation models reveal changes in key microbial communities associated with healthy ageing. *Microbiome* **9**, 240. <https://doi.org/10.1186/s40168-021-01189-5>

Spencer, C. N. *et al*. (2021). Dietary fiber and probiotics influence the gut microbiome and melanoma immunotherapy response. *Science* **374**(6575), 1632-1640. <https://www.science.org/doi/10.1126/science.aaz7015#tab-citations>

Tett, A. *et al*. (2021). *Prevotella* diversity, niches and interactions with the human host. *Nature Reviews Microbiology* **19**(9), 585-599. <https://doi.org/10.1038/s41579-021-00559-y>

van der Hee, B. & Wells, J. M. (2021). Microbial regulation of host physiology by short-chain fatty acids. *Trends in Microbiology* **29**(8), 700-712. <https://doi.org/10.1016/j.tim.2021.02.001>

Wu, W.-L. *et al*. (2021). Microbiota regulate social behaviour via stress response neurons in the brain. *Nature* **595**(7867), 409-414. <https://doi.org/10.1038/s41586-021-03669-y>

Yan, J. *et al*. (2021). *Akkermansia muciniphila*: is it the Holy Grail for ameliorating metabolic diseases? *Gut Microbes* **13**(1), 1984104. <https://doi.org/10.1080/19490976.2021.1984104>

Zhang, T. *et al*. (2021). The potential of *Akkermansia muciniphila* in inflammatory bowel disease. *Applied Microbiology and Biotechnology* **105**(14), 5785-5794. <https://doi.org/10.1007/s00253-021-11453-1>

**Plant-associated prokaryotes**

Abadi, V. A. J. M *et al*. (2021). Diversity and abundance of culturable nitrogen-fixing bacteria in the phyllosphere of maize. *Journal of Applied Microbiology* **131**(2), 898-912. <https://doi.org/10.1111/jam.14975>

Bano, S. *et al*. (2021). Towards sustainable agriculture: rhizosphere microbiome engineering. *Applied Microbiology & Biotechnology* **105**(19), 7141-7160. <https://doi.org/10.1007/s00253-021-11555-w>

Büttner, H. *et al*. (2021). Bacterial endosymbionts protect beneficial soil fungus from nematode attack. *Proceedings of the National Academy of Sciences of the USA* **118**(37), e2110669118. <https://www.pnas.org/content/pnas/118/37/e2110669118.full.pdf>

Compant, S. *et al*. (2021). The plant endosphere world – bacterial life within plants. *Environmental Microbiology* **23**(4), 1812-1829. <https://doi.org/10.1111/1462-2920.15240>

Fitzpatrick, C. R. *et al*. (2020). The plant microbiome: From ecology to reductionism and beyond. *Annual Review of Microbiology* **74**, 81-100. <https://www.annualreviews.org/doi/abs/10.1146/annurev-micro-022620-014327>

Martínez-Romero, E. *et al*. (2021). We and herbivores eat endophytes. *Microbial Biotechnology* **14**(4), 1282-1299. <https://doi.org/10.1111/1751-7915.13688>