“Evolution and virulence in the symbiotic world.”

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Many animal and plant species harbour microbes in their microbiota that suppress pathogen infection. These ‘protective microbes’ can be a significant component of host defence. By experimentally evolving worms and bacterial pathogens, my group has demonstrated that host-associated microbes can rapidly evolve to defend their animal hosts against infection. We show these protective microbes can drive major changes in pathogen virulence and host genetic-based resistance, as well as alter coevolutionary dynamics and evolutionary rates. Our results indicate that microbes in hosts are important in shaping infection outcomes, now and over evolutionary time.