Host-microbe symbioses are ubiquitous in nature, yet the vast majority of these remain poorly described, even in animals that have been long studied. I will discuss how a distinctive gut microbiome in social bees (e.g., honey bees and bumble bees) was recently discovered and characterized, and the lessons this system offers for microbial community assembly and host interactions. Work done to turn bees into a tractable experimental system for microbiome studies will also be highlighted. Finally, I will describe a new symbiosis in reef corals that reveals key insights into the origins and evolution of the Apicomplexa, a large clade of parasites that include the causative agents of human diseases such as malaria and toxoplasmosis.