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This eBook presents all 10 articles published under the Frontiers Research Topic "Evolutionary Feedbacks Between Population Biology and Genome Architecture", edited by Scott V. Edwards and Tariq Ezaz. With the rise of rapid genome sequencing across the Tree of Life, challenges arise in understanding the major evolutionary forces influencing the structure of microbial and eukaryotic genomes, in particular the prevalence of natural selection versus genetic drift in shaping those genomes. Additional complexities in understanding genome architecture arise with the increasing incidence of interspecific hybridization as a force for shaping genotypes and phenotypes. A key paradigm shift facilitating a more nuanced interpretation of genomes came with the rise of the nearly neutral theory in the 1970s, followed by a greater appreciation for the contribution of nonadaptive forces such as genetic drift to genome structure in the 1990s and 2000s. The articles published in this eBook grapple with these issues and provide an update as to the ways in which modern population genetics and genome informatics deepen our understanding of the subtle interplay between these myriad forces. From intraspecific to macroevolutionary studies, population biology and population genetics are now major tools for understanding the broad landscape of how genomes evolve across the Tree of Life. This volume is a celebration across diverse taxa of the contributions of population genetics thinking to genome studies. We hope it spurs additional research and clarity in the ongoing search

for rules governing the evolution of genomes.			