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On the cover: The evolution of arthropod-borne viruses, such as dengue or chikungunya, is thought to be strongly influenced by their mosquito hosts. Thus, the ability to follow the host-specific evolutionary trajectories of these viruses is essential to predict and prevent epidemics. In this issue, Stapleford et al. (pp. 706–716) examine the evolution of chikungunya virus in mosquitoes and show that the emergence of previous and potentially future epidemic strains can be detected by monitoring saliva samples. They identify mutations that increase virion stability and fusion activity and show their potential to replace a currently circulating strain in natural transmission experiments. The cover image illustrates the ominous threat posed by mosquitoes and the evolving viruses that they harbor. Cover art designed by Stephanie Welter of Celery Design Collaborative.