Why Simulations?
Computer models provide valuable data that can complement in vivo and in vitro experiments. Simulations can be used to collect large amounts of data that approximate what is happening under experimental conditions. These are completed in less time than comparable wet lab experiments. They can be used for studies which are not otherwise feasible, including examining the effects of lethal or very small mutations one cannot measure.

Why Clocks?
Circadian clocks are internal biochemical pathways that give rise to cyclic behavior, most notably rhythmic rest, activity, metabolism, movement, and other basic life processes. All animals have at least one circadian clock, which is thought to increase efficiency by synchronizing synergistic reactions and temporally separating reactions with possible negative interactions. The widespread nature of circadian rhythms and the many biological processes impacted by clocks indicate that a better understanding of circadian rhythms could have many possible applications in a variety of species.