
Fruit Fly Feelings

Most people think of fruit flies only as annoying pests that invade our kitchens and cause us distress. But it turns out flies have feelings, too—and may hold clues to understanding how the human brain processes emotion.

In the lab of Caltech biologist [David Anderson](#), *Drosophila*—the common fruit fly—has served as an important model for unraveling the functions of various genes and their roles in influencing behavior.

“Usually when people think about emotion, they assume it’s really complicated and something that only humans have,” says Hidehiko Inagaki, a graduate student who came to Caltech from Tokyo to work in Anderson’s lab. “But when we compare a number of emotion-related genes in the fly to those in humans, they are quite similar.”

Inagaki and junior neurobiology student [Ketaki Panse](#) spoke at TEDxCaltech about their research, which looks at neuromodulators—chemicals like dopamine and serotonin that can tamp down or boost brain signals—that might be responsible for “emotions” brought on by hunger in fruit flies. These emotions are what prompt the flies’ feeding and searching behaviors.

“There are so many genetic tools that we can use with the fruit flies, since they only have four chromosomes and are obviously much simpler organisms than we are,” explains Panse. “If we can understand this simple organism, then hopefully we can understand the fundamental mechanisms that underlie both basic fly emotions and complex emotions in humans, which I think is really cool.”—*KN*