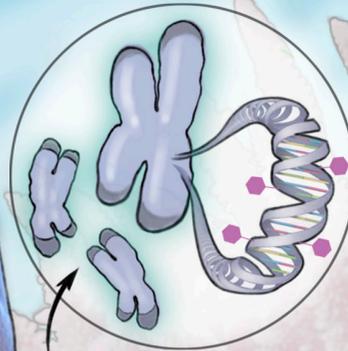
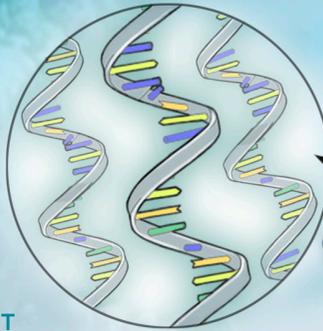


## MECHANISMS OF MEMORY

Corals in the wild have demonstrated an ability to “remember” their past exposure to heat stress, thereby helping them fare better during subsequent bleaching events. To understand this so-called environmental memory, scientists are studying the phenomenon in the laboratory and have uncovered multiple ways in which corals may remember previous exposure to heat stress. Corals might also be capable of passing on their memory to their offspring, although the mechanism for that specific process remains unknown.

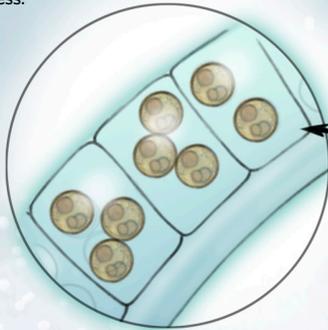
### TRANSCRIPTION BOOST

Corals can “frontload” the expression of genes involved in apoptosis, the heat shock response, and oxidative stress, among others.



### SYMBIONT SHIFT

Some coral species undergo a shift towards a more tolerant clade of symbiotic algae in response to heat stress.



### EPIGENETIC CHANGES

Exposure to heat can sometimes alter the amount of DNA methylation in a coral's genome.

### PREPARED OFFSPRING

Preliminary evidence suggests that the larvae of corals that experience bleaching are better able to tolerate subsequent heat stress.