

Transmission of Memories Across Generations in *C.elegans* Nematodes

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In *C.elegans* nematodes small RNAs enable transmission of epigenetic responses across multiple generations. The mechanisms that mediate small RNA inheritance in the germline are being elucidated, and multiple factors, which are needed for this type of epigenetic inheritance *per se* have been identified. Different environmental conditions, including exposure to viruses, starvation, and heat stress generate heritable small RNA responses. It is still unclear whether endogenous small RNAs, similarly to exogenous small RNAs, can move between cells, and from the soma to the germline (breaching the “Weismann barrier, and allowing inheritance). We are interested in the provocative possibility that heritable small RNA responses can alter the progeny’s behavior, by altering the function of the worm’s nervous system. I will discuss our recent findings, ideas, and theories.