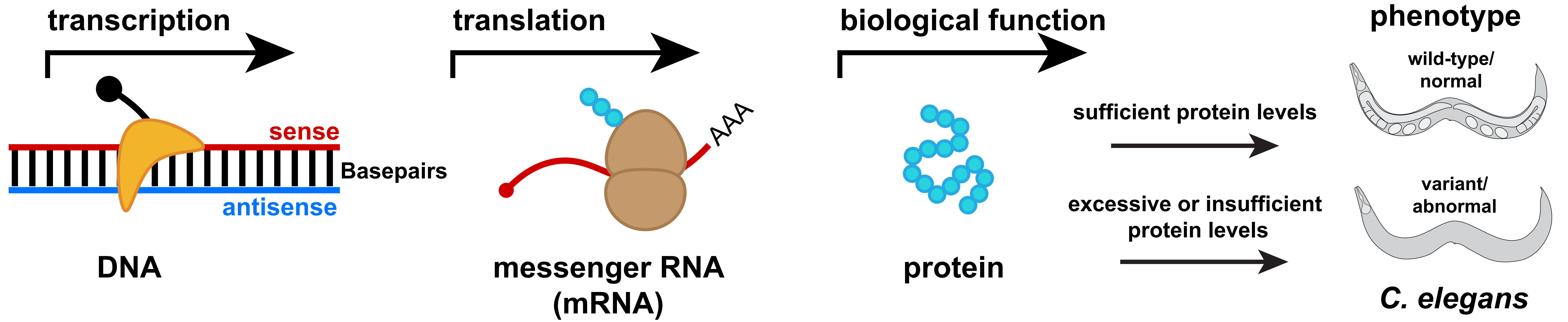


Tiny worms, Titanic influence: a simple animal leads to ground breaking discoveries in RNA biology

Ian Price, Benjamin Pastore, Yi-Hui Wang, Wen Tang



1. The Central Dogma of molecular biology



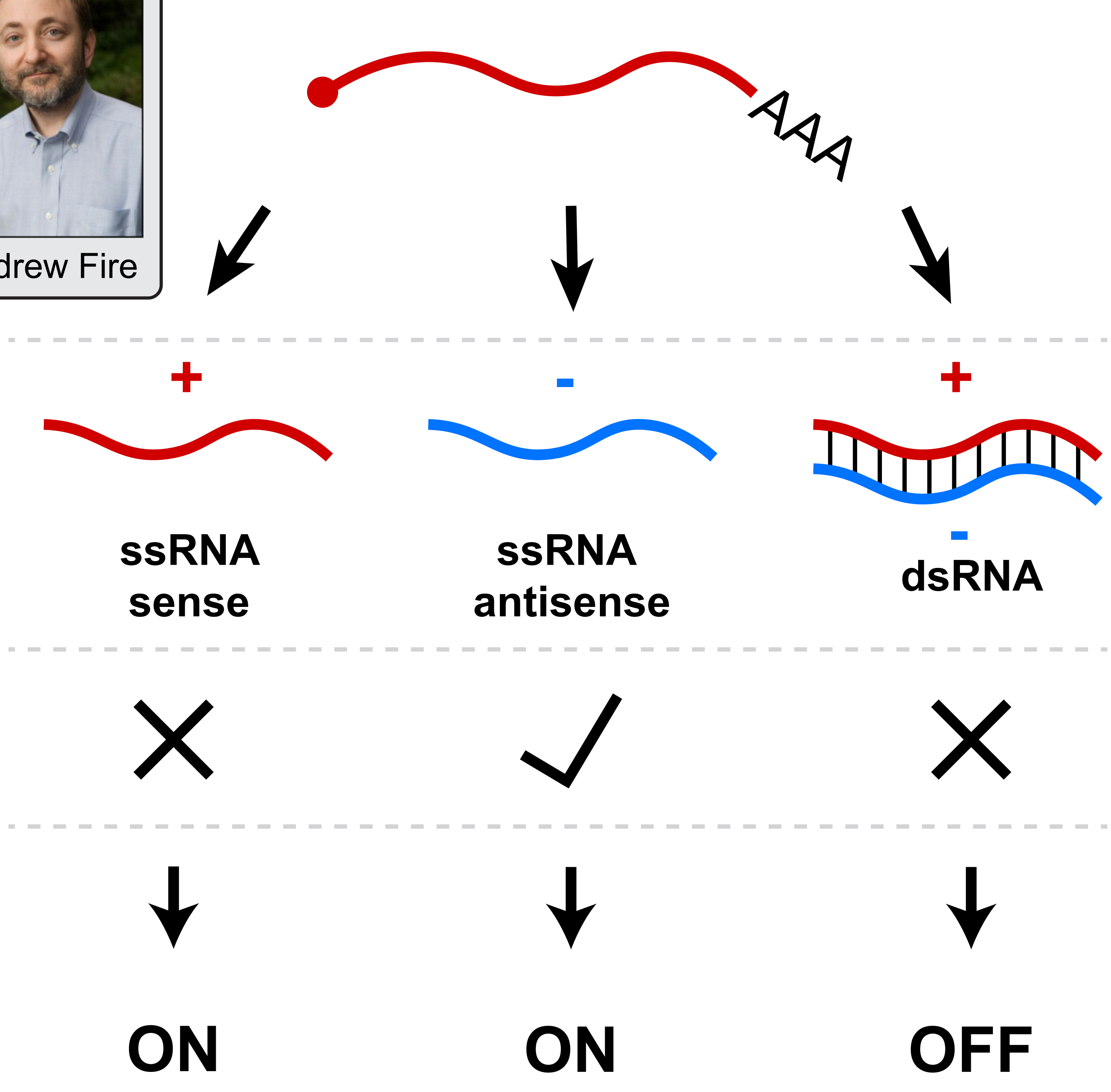
2. Discovery of RNA-interference (RNAi)

Nobel Prize 2006



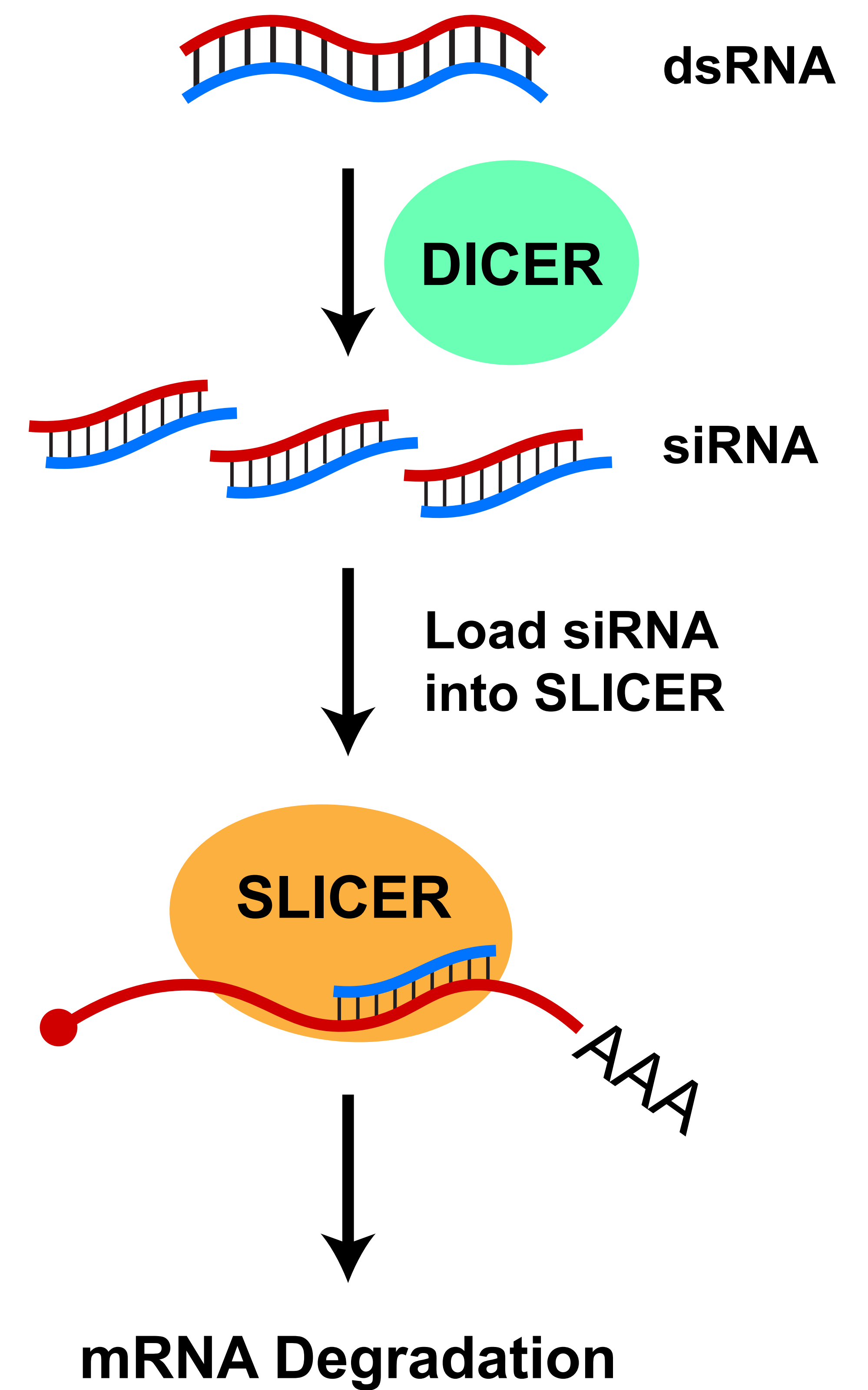
Craig Mello Andrew Fire

mRNA

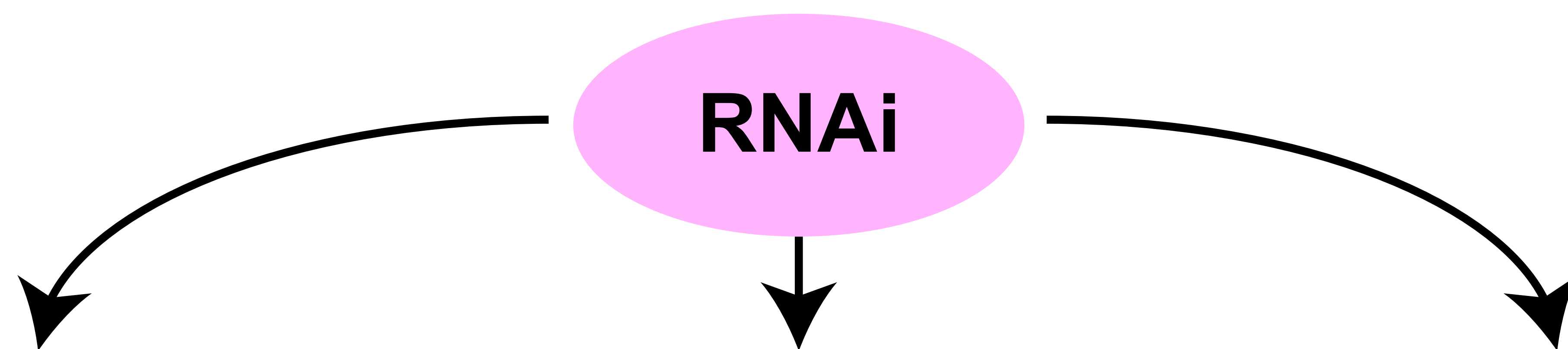


Why does introduction of dsRNA turn off gene expression?

3. Mechanism of RNAi



4. Why study RNAi? Who cares?



Immunity

Organisms use RNAi to defend against infection by viruses.

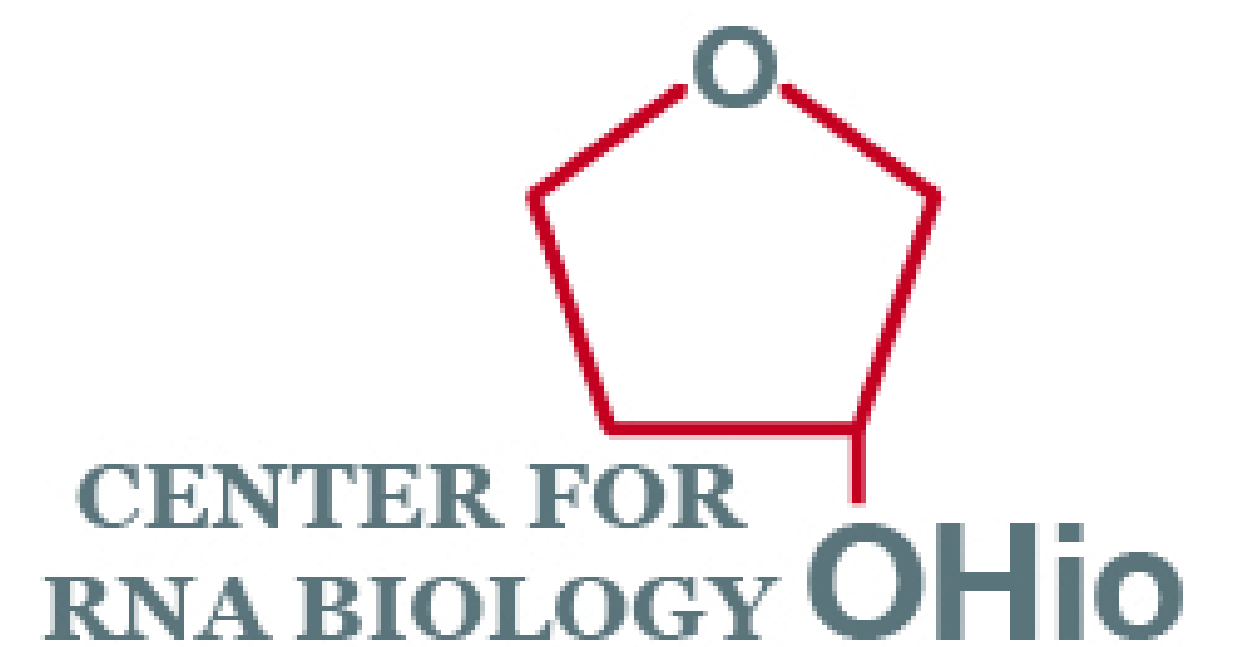
Research

Researchers use RNAi to study the function of genes through an approach known as "reverse genetics".

Therapeutics

The power of RNAi can be used in therapeutics to modulate gene expression that may be aberrant in human diseases, such as cancer. RNAi is already being used to treat many different diseases!

Acknowledgement



Video from *Nature* on RNAi:



Reference:

Fire et al., (1998) PMID:9486653
 Tabara et al., (1999) PMID:10535731
 Setten et al., (2019) PMID:30846871
 Guo et al., (2019) PMID:30301972