

How can memories be stable for years or even decades when the molecules responsible for their formation appear to have lifetimes of hours to weeks?

- Identify the key molecular players
- Identify physical and/or dynamic structures that promote stability
- Build models and/or analogs
- Test hypotheses

Can we identify a minimal system capable of “thought”?

- Define criteria for “thought” (hard!)
- Identify components – neurons, glia, neurotransmitters, ...
- Design *in vitro* experiments
- Build model systems (*in vitro*, *in silico*)
- Use as testing ground for theories (neural “H-atom”)