Overview of Behavioral Neuroscience
Physiological Basis of Mental Processes and Behavior:

1) Mental Processes, or “The Mind”:
   A) Sensation of the World (receptors)
      Vision, Audition, Somatosensation, Taste, Smell
   B) Perception of the World (interpret)
   C) Thoughts about the World

2) Behavior
   Motor                           Language
   Eating/Drinking                Emotional
   Sleeping                       Sexual

Mental Process -> Behavior (but not always)
How to study the MIND? (Age-old question)

- Philosophers
- Cognitive Psychologists
- Physiological Psychologists (Neuroscientists):

  THE MIND = THE BRAIN
MIND/BRAIN problem
is the MIND = the BRAIN?

Dualism vs. Monism (more next lecture)

Dualism

Definition: The mind exists *independently* of the brain, the two are of different substances, but may interact (*brain* = physical, *mind* = *metaphysical*).

Monism

Definition: Mind and brain are two ways of talking about the same thing. *In theory*, all mental experiences and behaviors can be explained in terms of physical processes in the brain/body.

Physiological Psychology (Neuroscience): **MONISM:** “the mind is the brain”…

*but that doesn’t make the mind any less miraculous!*

(Pat Churchland)
The Use of Animals for Research

Reasons:

1) Start simple.
   Example: Aplysia, to study learning and memory

2) Highlighted Mental Process or Behavior.
   Example: olfaction in rats

3) Interest for its own sake.
   Example: echolocation in bats

4) Elucidate human evolution.

5) When using animals is the only way to address the question.

6) Medical relevance -> save/improve human lives (even basic research can!)

- Strict guidelines exist for the use of animals
- Animal research is justified if the benefits of the results are greater than whatever suffering the animal might experience. **Problem:** who decides and how do we quantify the benefits and suffering?