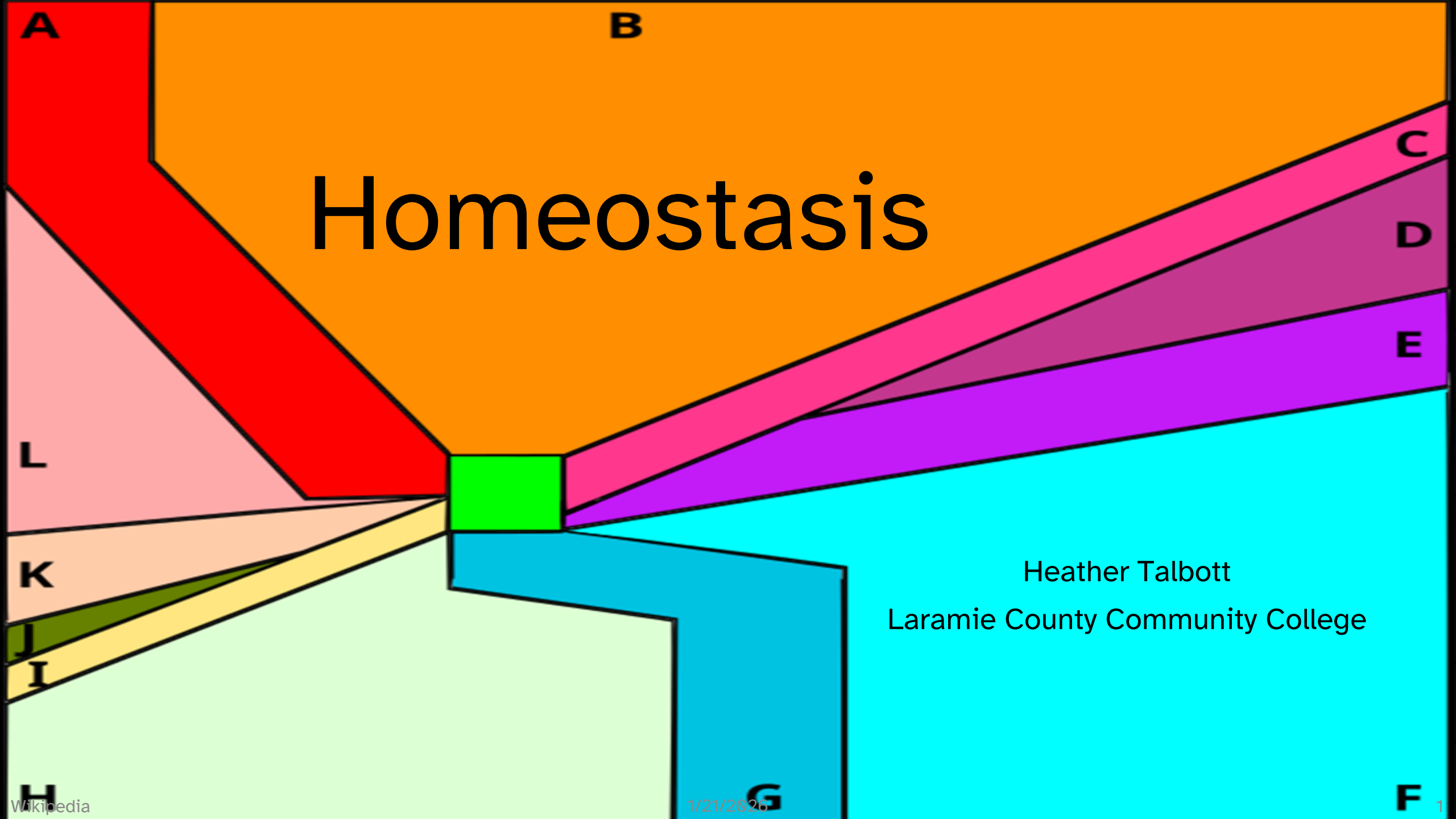


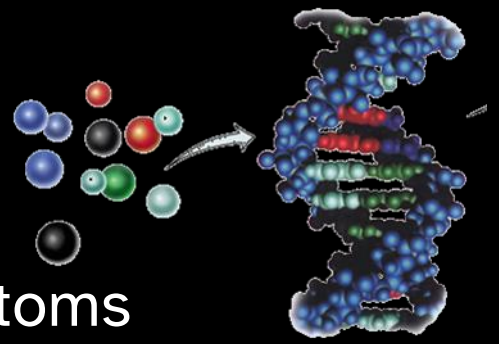
Homeostasis

Heather Talbott

Laramie County Community College

Structural Organization

1 **CHEMICAL LEVEL**



Atoms (C, H, O, N, P)

Molecule (DNA)

2 **CELLULAR LEVEL**

Smooth muscle cell

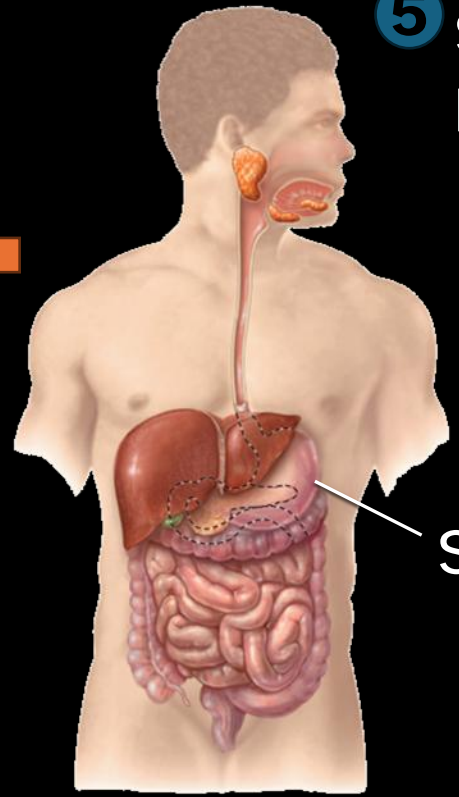
3 **TISSUE LEVEL**

Smooth muscle tissue

4 **ORGAN LEVEL**

Smooth muscle tissue layers

5 **SYSTEM LEVEL**



Stomach

6 **ORGANISMAL LEVEL**

Mark Nielsen

Homeostasis

- **Homeostasis:** the condition of equilibrium (balance) in the body's internal environment due to constant interaction of the body's regulatory processes
- The survival of the body is dependent on the precise regulation of the chemical composition at the cellular and tissue levels
- **Set point:** the physiological value around which the normal range fluctuates
- **Normal range:** the restricted set of values that is optimally healthful and stable

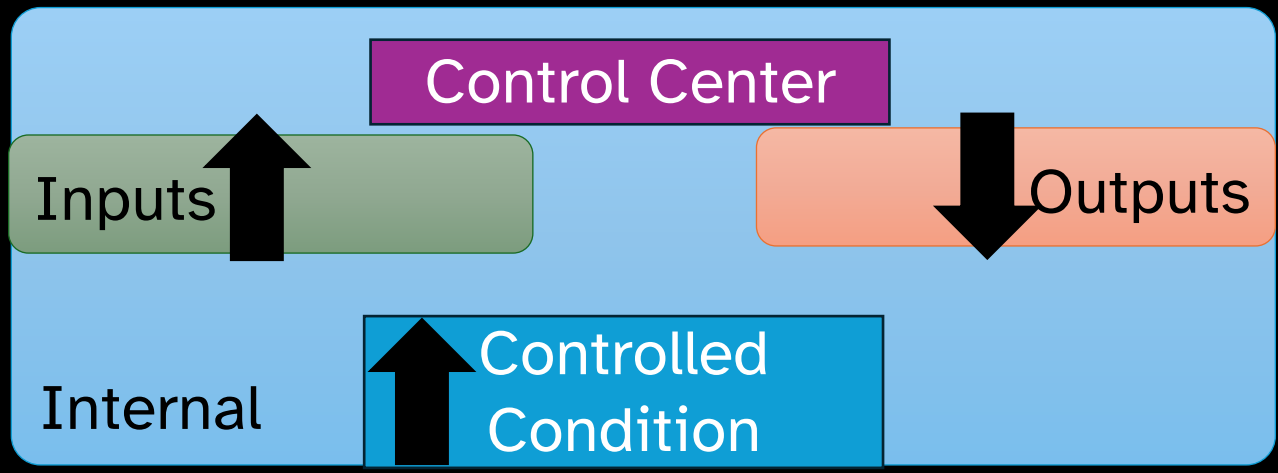
Feedback Systems/Loops

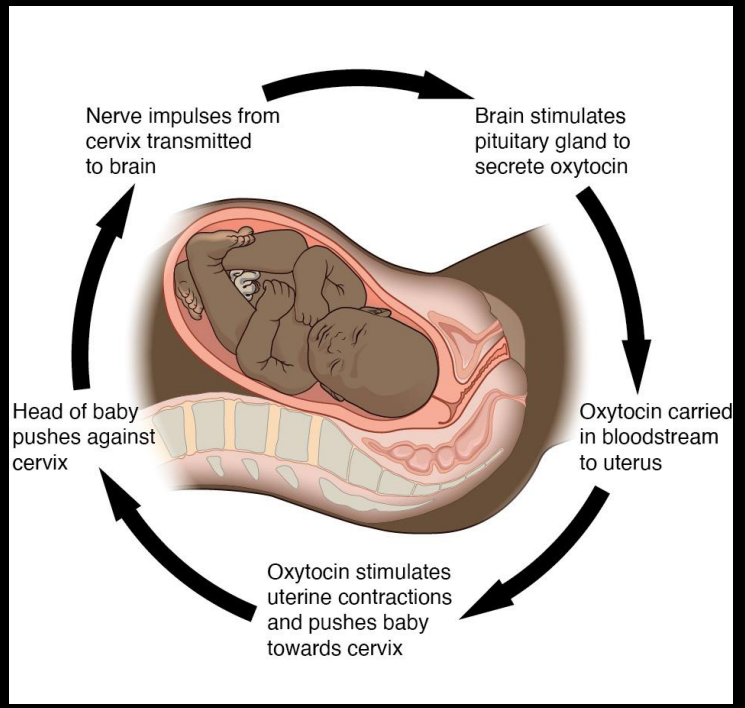
- **Feedback system**: the end product/result of a pathway regulates the progress (often initiation) of the pathway

- **Negative feedback**: a mechanism that maintains body parameters within their normal range by reversing deviations from the set point

- **Positive feedback**: intensifies a change in the body's physiological condition rather than reversing it.

- Most physiological pathways use negative feedback

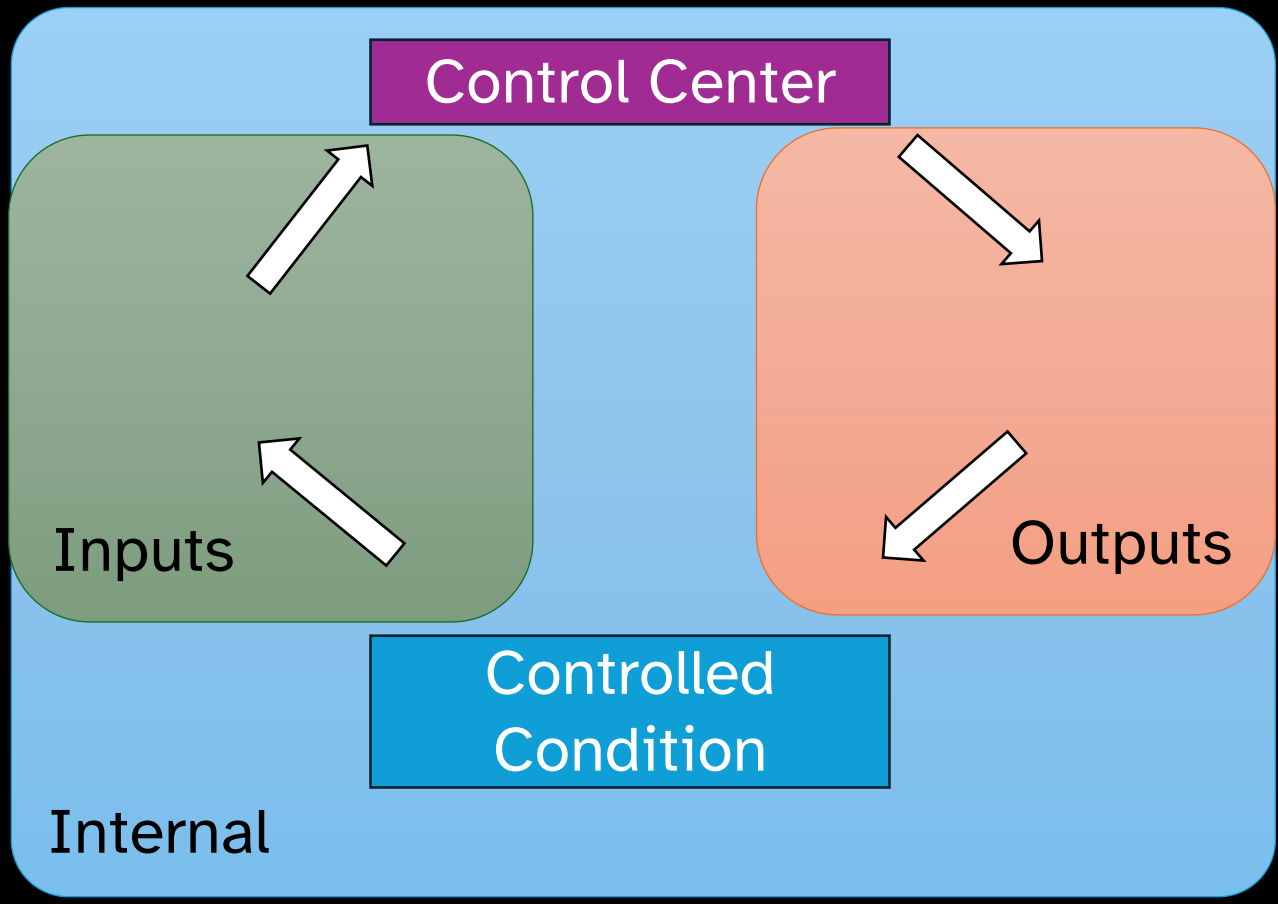




Parts of a Feedback System 1

- **Controlled condition:** a body condition that changes

- **Control center:** sets a range of values within which a controlled condition should be maintained by monitoring inputs and outputs

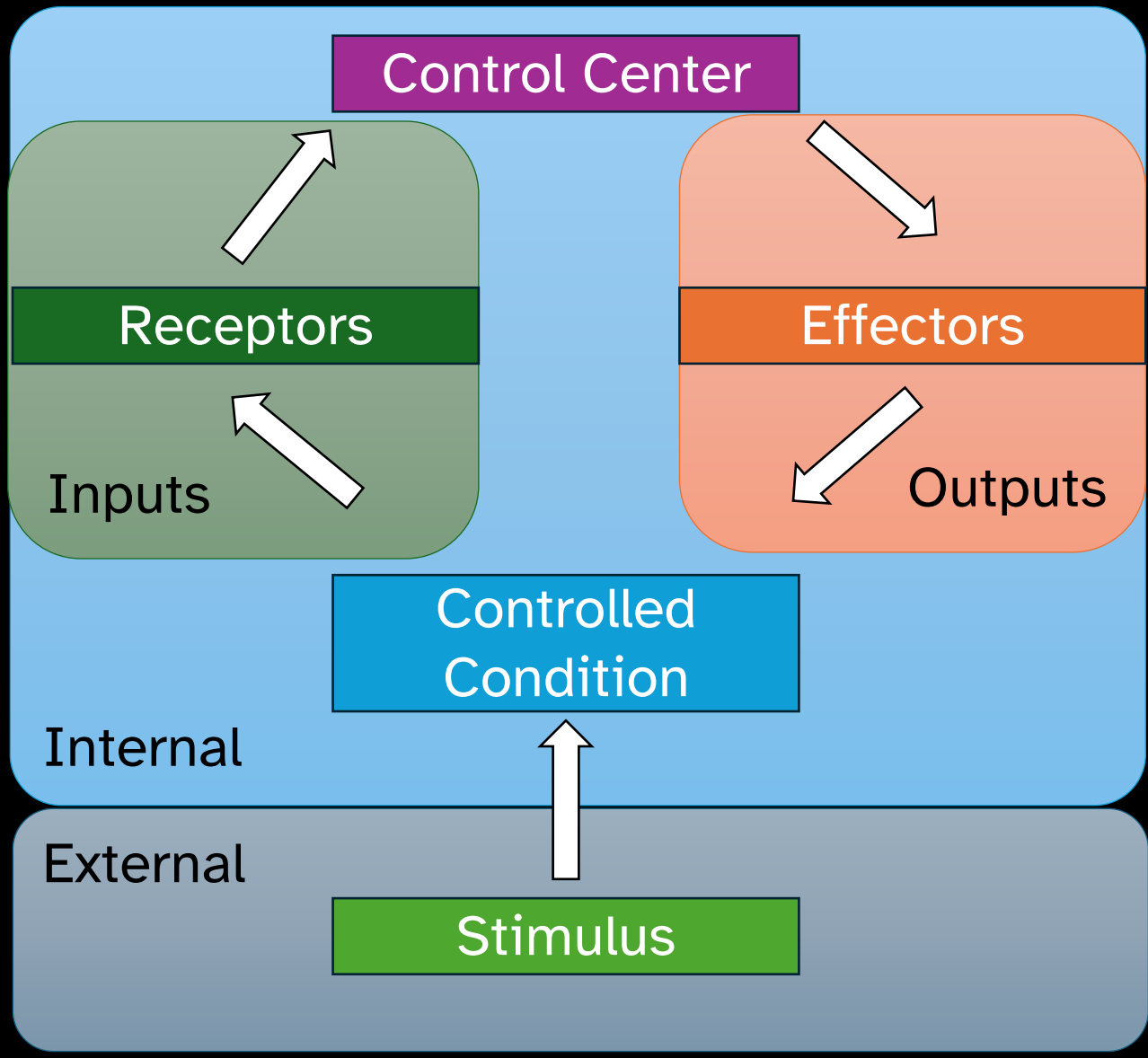


Parts of a Feedback System 2

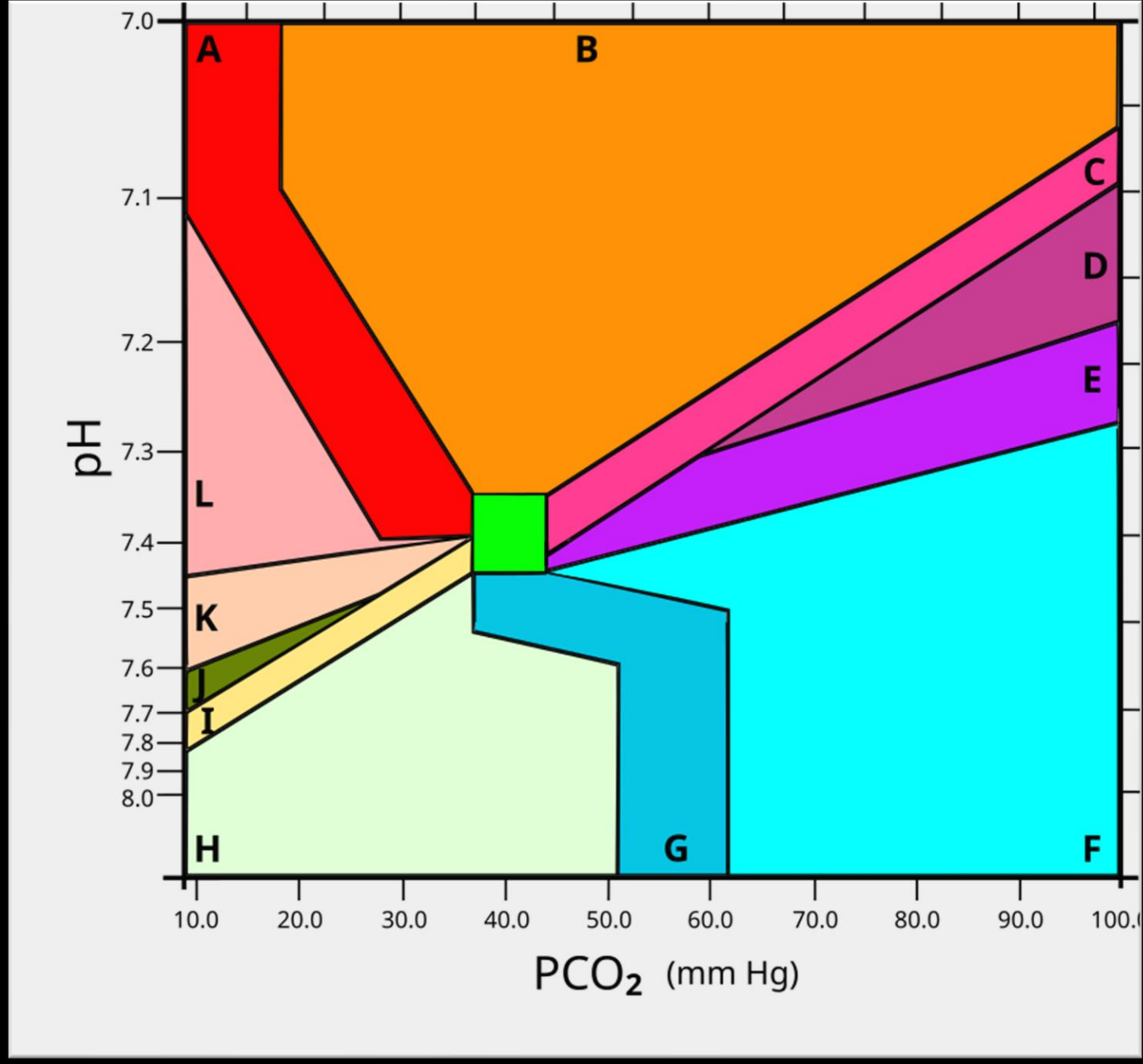
- **Sensor/Receptor:** a body structure that monitors changes in a controlled condition and sends input to the control center

- **Effector:** a body structure that receives output from the control center and produces a response or effect that changes the control condition

- **Stimulus:** some external situation that disrupts the body's homeostasis



Homeostasis Example



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- Last updated by: Heather Talbott
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