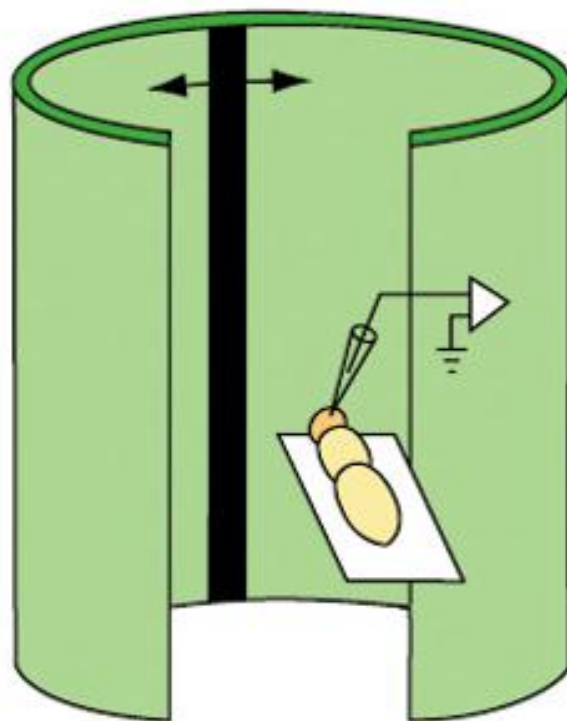
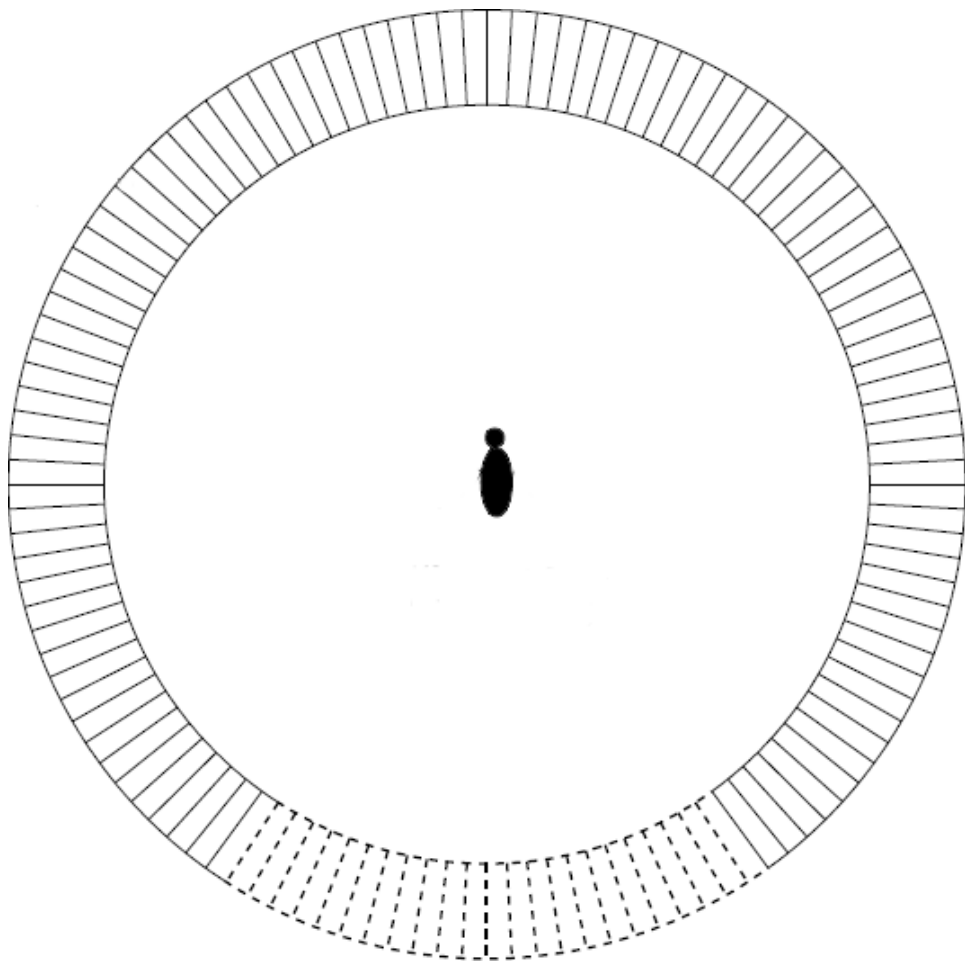


# Fly Vision

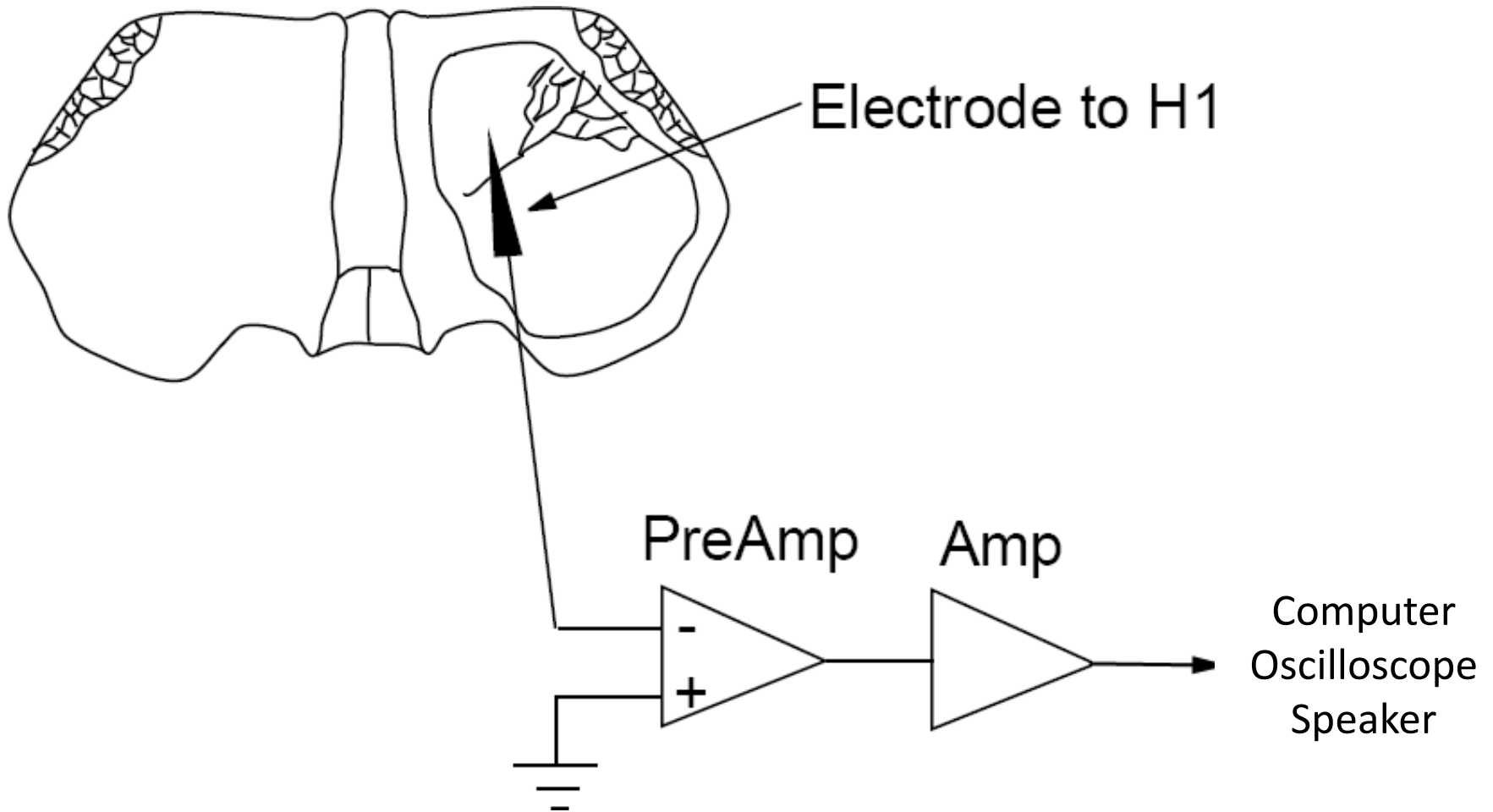
Jeff Bush

TA: Jeff Moore

# Visual Arena



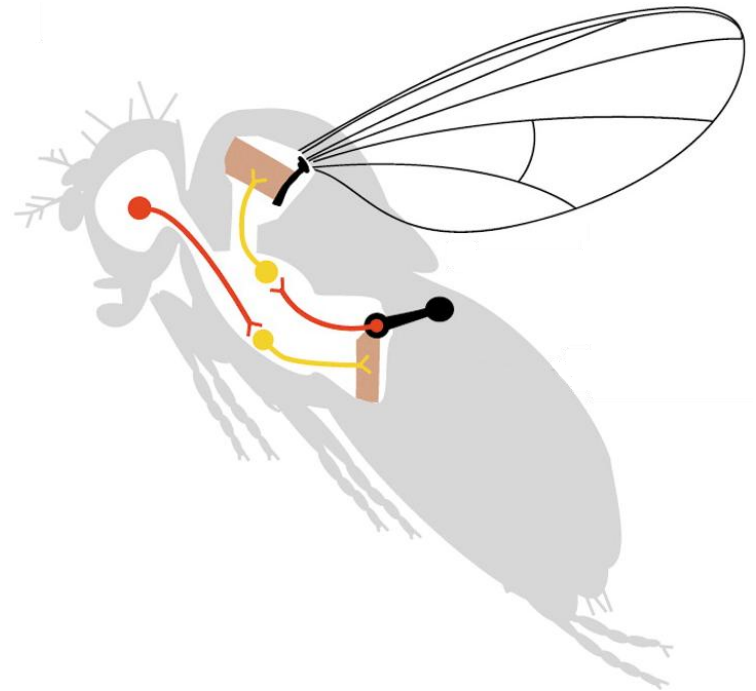
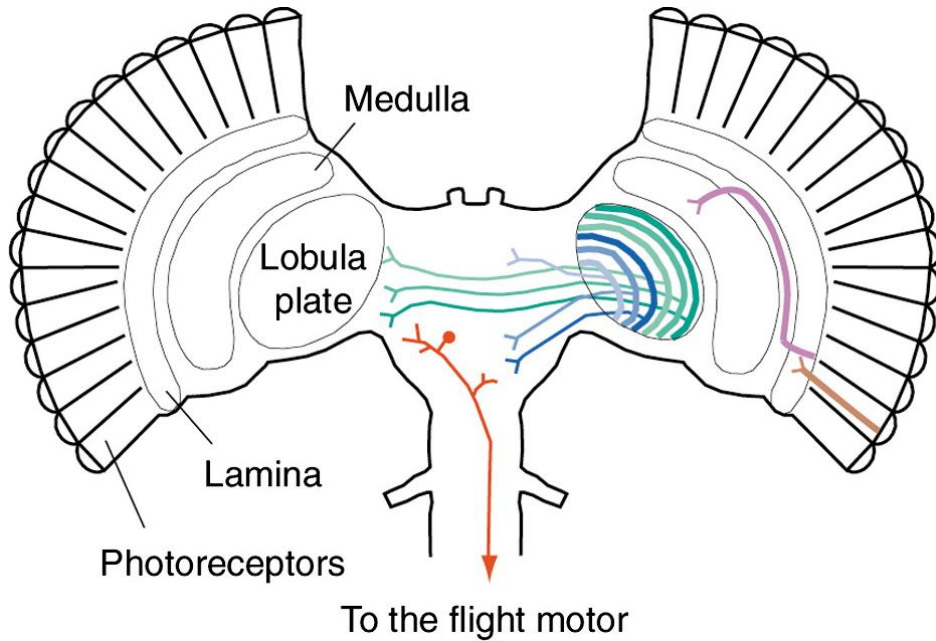
# Rear View of Fly's Head



# H1 Neurons

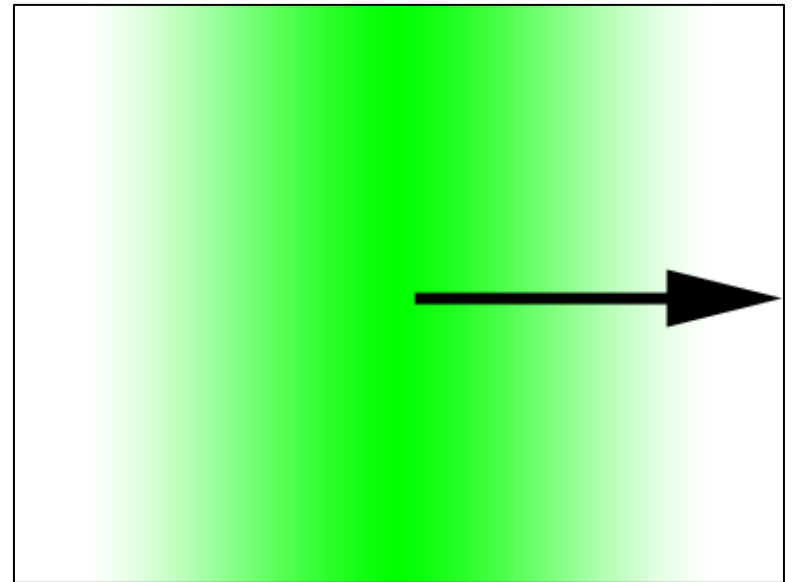
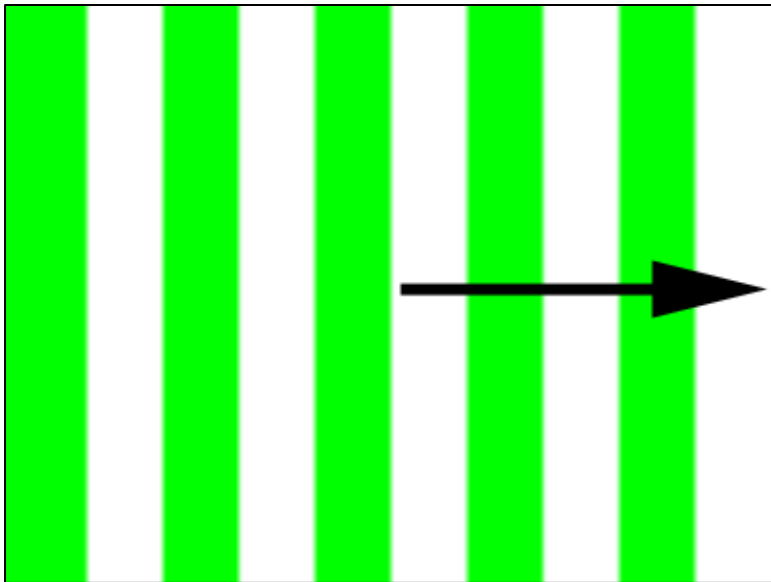
- Part of fly visual cortex
- Respond to regressive horizontal motion
- Responsible for generating and guiding stabilizing motor corrections

# Visual System / Motor System



# Testing Stimuli

- Continuous movement in one direction for a long period of time (a couple of minutes)
  - This could be with alternating bars, a sine, or some other pattern



# Testing Stimuli

- Repeat the constant velocity stimulus
- Do the spiking properties change?  
Does the H1 neuron adapt?
- Will it still adapt given no stimulus between the two stimuli? How long can the break be?
- Can it adapt to constant acceleration?

# Data Processing

- Filter to remove 60 Hz noise and other noise
  - Removed as much of it as I could with shielding, but it was still there
  - Use MATLAB fdesign
- Find times when external voltage was above a threshold (spikes)
  - Take a 2ms window around threshold crossing (waveform)
    - Try to find if the waveforms cluster in some dimensions
  - Find the spike triggered average, what portion of the stimulus does the cell like best?

# Acknowledgements

- Jeff Moore
- Phil and David
- Pam Ponsness at Forked Tree Ranch
- Everyone for dealing with the rouge flies