

# ME 599/AA 546/EE 546: **Biology-inspired robot control**

Lecture 8

Sawyer B. Fuller

Goals:

- Introduce Paper 5
- Presentation and discussion of Paper 4 by Yogesh Chukewad

# set 1 solutions posted on line

## Problem set 1

 Published

 Edit

Pdf and skeleton code posted on the course website [here](#) .

Note: to fill in the dynamics function for your robots, note that it is rolling on the ground, so it must *move in the direction it is facing*. For vehicle 1 (problem 2), this means that it will move with a velocity equal to the wheel velocity input  $u$ , and will not intercept the light source unless it is facing directly toward it.

Note 2: online or paper submissions are both accepted (if you don't submit online, just bring a printout to class).

Solutions [here](#) (please do not distribute).

**Points** 4

**Submitting** a file upload

at end of class today: Jim  
Burgford-Parnell

- mid-quarter eval/feedback - what do you like and what could be improved?

# next Friday and following Wednesday

- midterm project presentations
  - initial results
  - next steps
- 10 min each + 2-5 min questions
- Order TBA

# Next wednesday's reading: "vehicles: Experiments in Synthetic Psychology" by Valentino Braitenburg

- reading: vehicles (chapters) 1—9, 12. pdf online on canvas.
- basic idea: understanding the brain can seem really hard
  - but by conceptualizing simple robots inspired by the brain it gets easier

• shows how brain discoveries would produce functional robots

• mculloch pitts neuron:  
"integrate and fire"

• hebbian learning/associative memory  
Pavlov's Dog: ring a bell and feed at  
same time, dog learns to salivate at bell  
"neurons that fire together wire together"

