

STEVE DICKIE

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# CHEAP SENSORS – REAL QUESTIONS

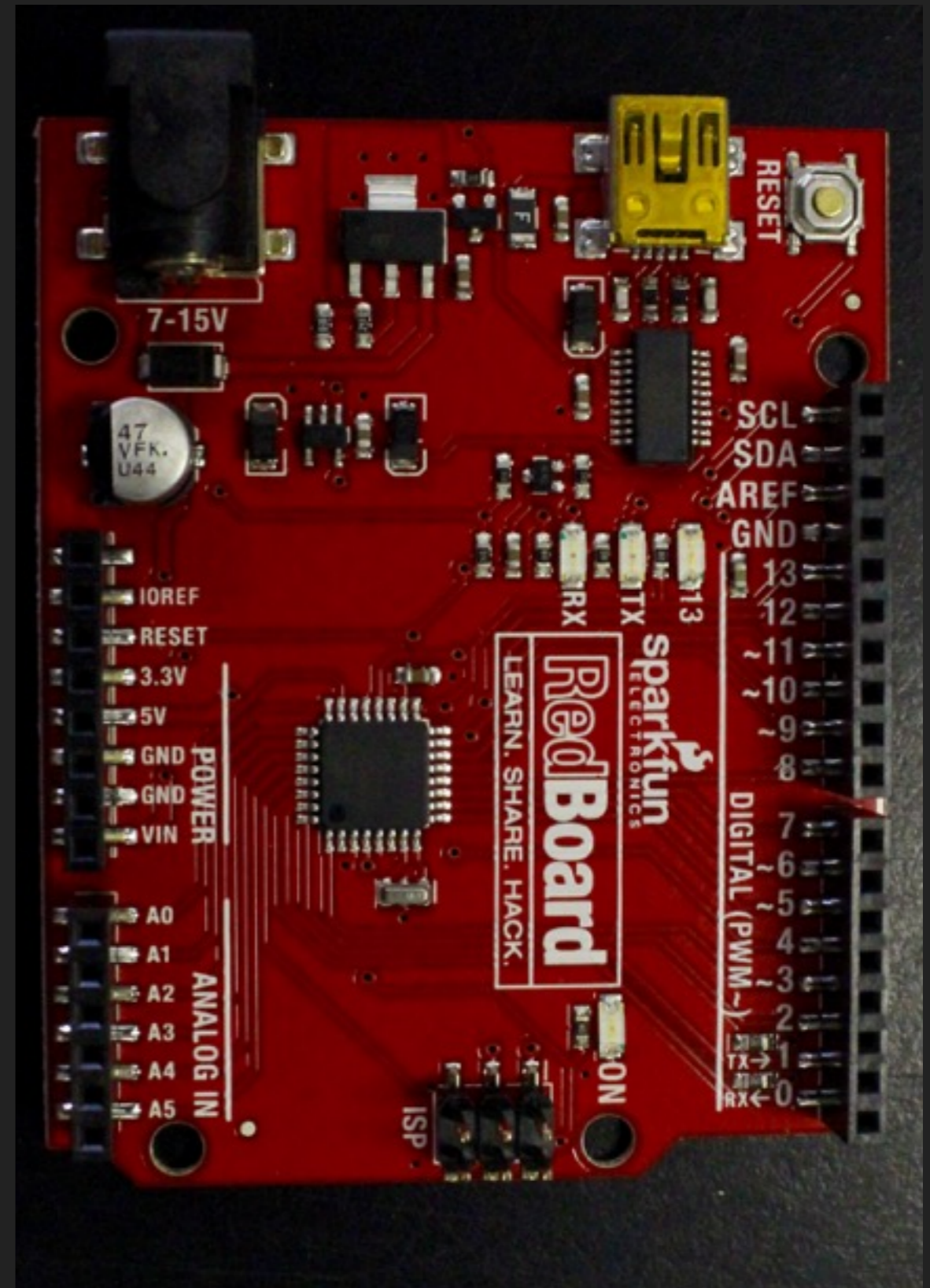
## VERNIER AND PASCO

- ▶ There are a variety of sensors available



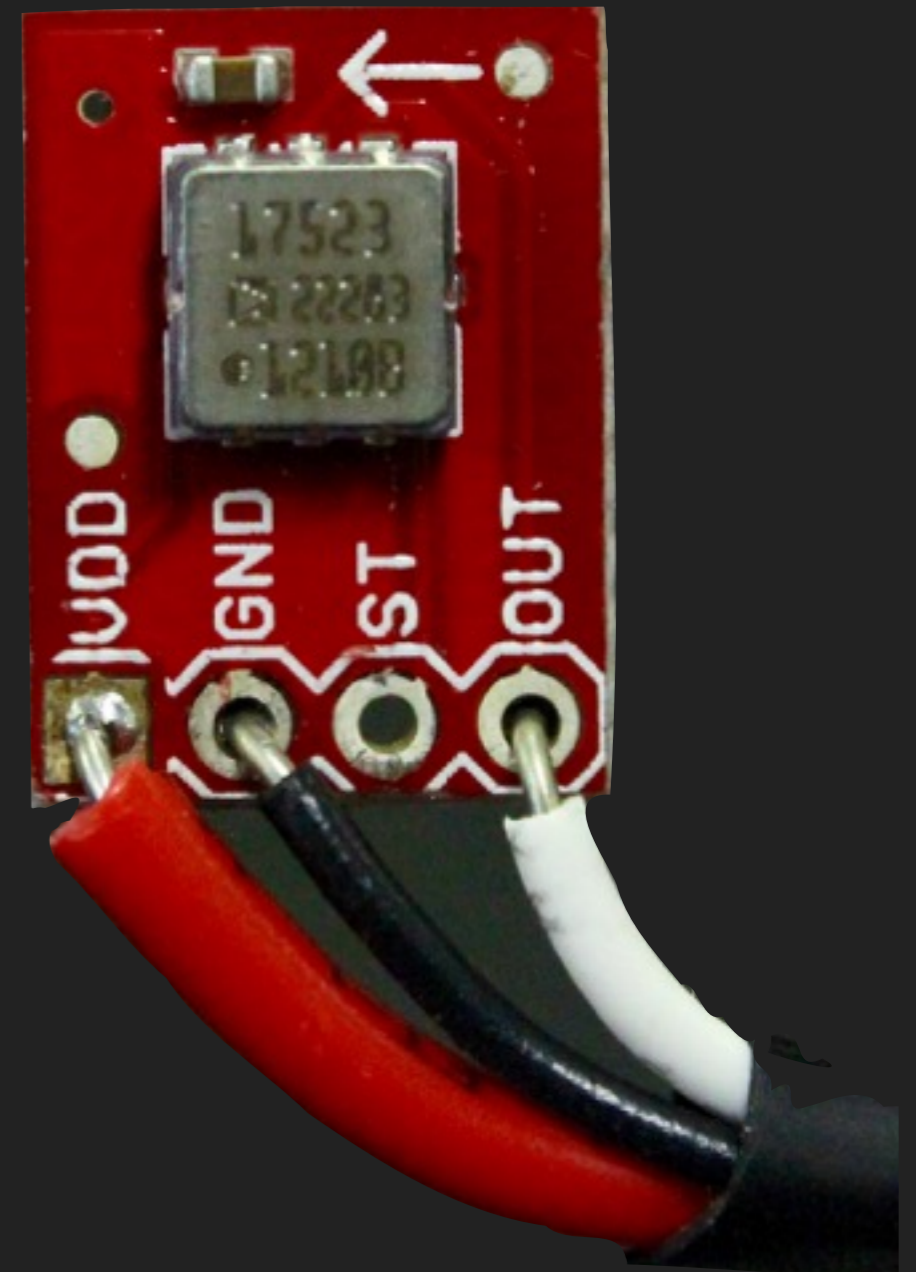
## MAKER MOVEMENT

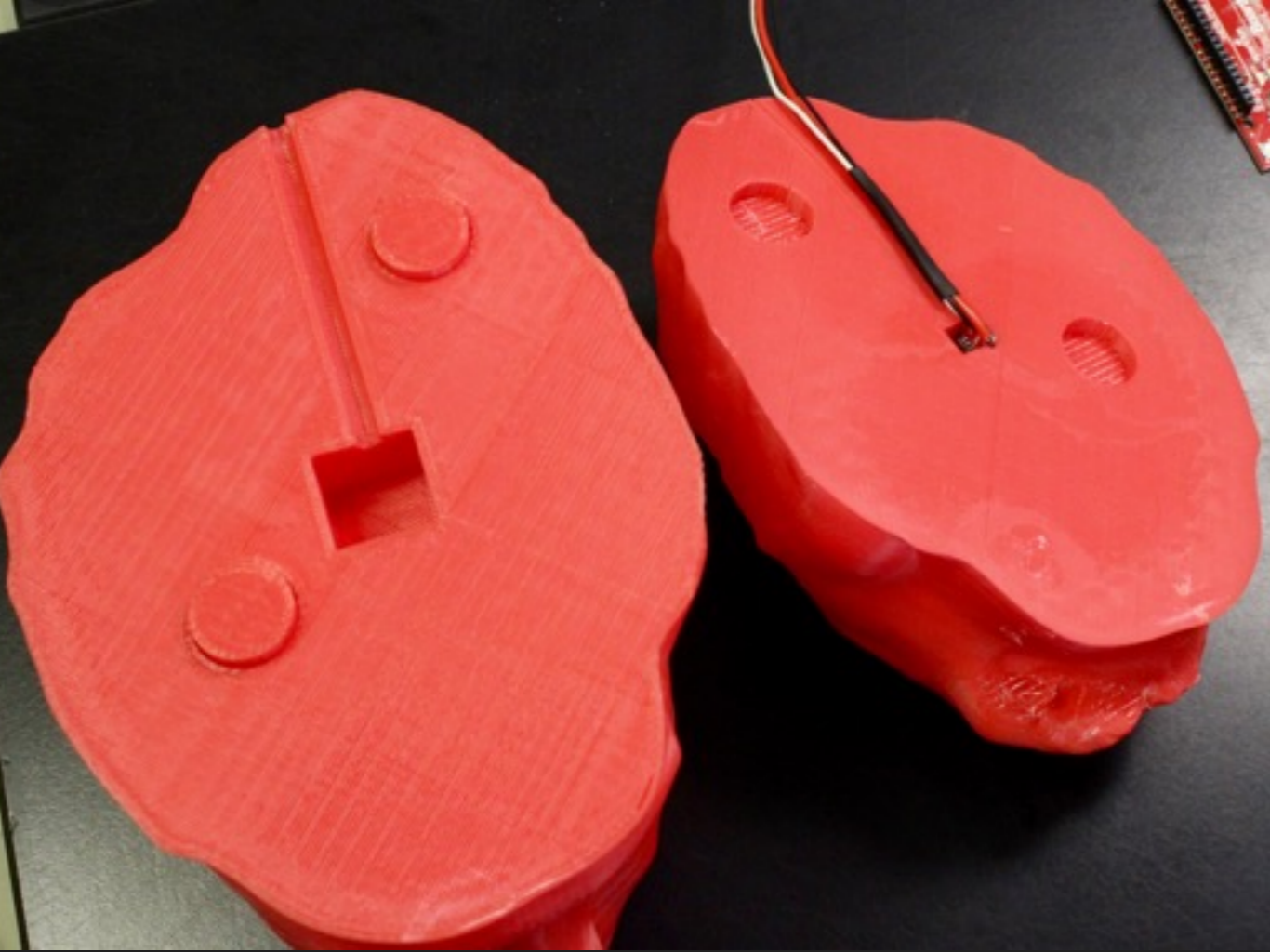
- ▶ Easy to program micro-controllers
- ▶ 3D Printing
- ▶ Lots of cheap sensors
  - ▶ Force
  - ▶ Temperature
  - ▶ Acceleration
  - ▶ Magnetometers



## FOOTBALL AND CONCUSSIONS

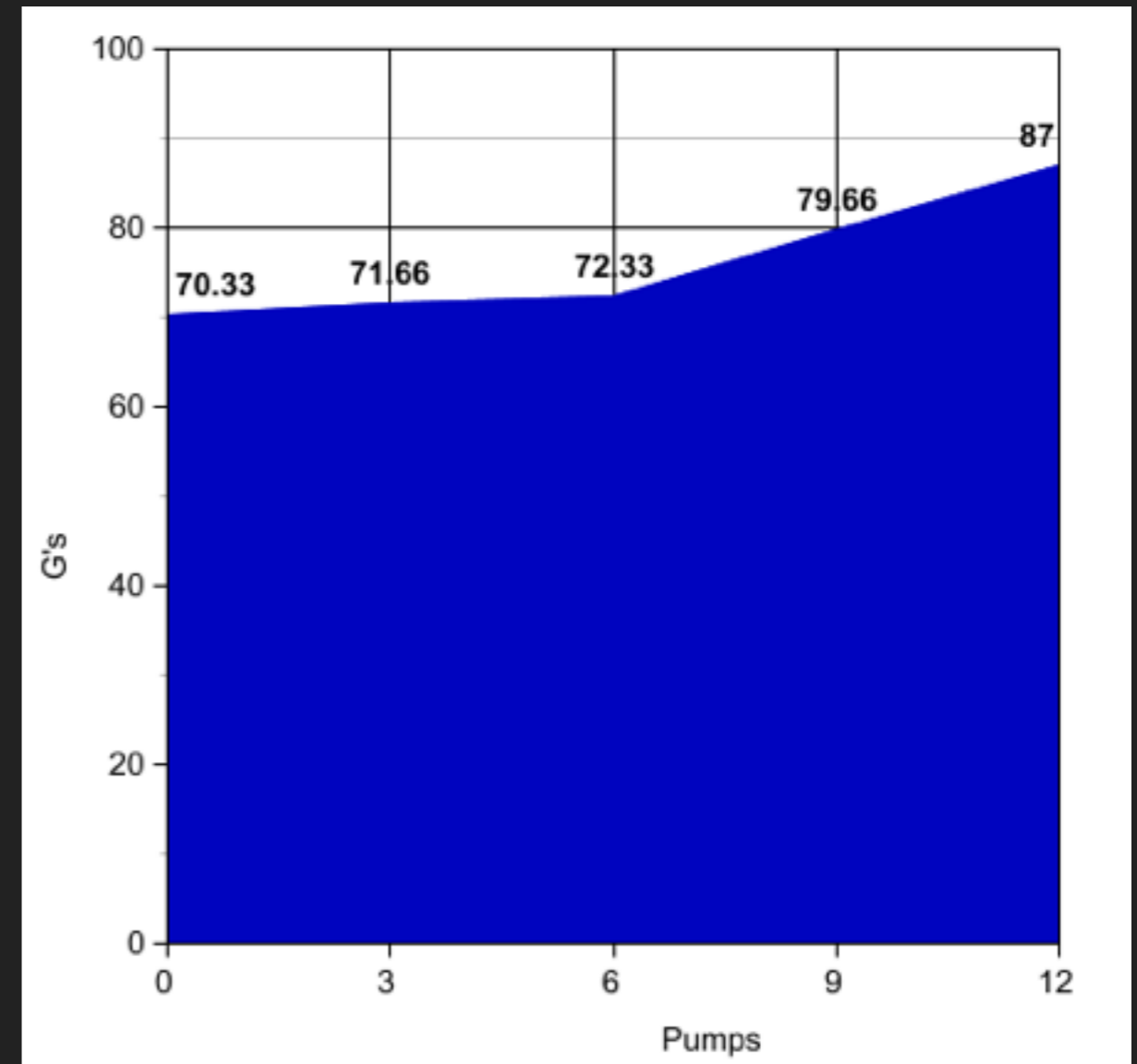
- ▶ Student project in electronics
- ▶ 250 g Accelerometer from Sparkfun Electronics
- ▶ Arduino plugged into a computer to record data





## ELECTRONICS FINAL PROJECT

- ▶ <http://jackhooverelectronics.blogspot.com/2016/01/final-project.html>
- ▶ Investigated the effect of the amount of air pumped in on the acceleration/force felt during a collision.



# ANALOG SENSORS

- ▶ Vernier makes a cable that allows you to easily interface analog sensors with a LabPro or LabQuest
- ▶ No programming required
- ▶ There are a lot of really affordable analog sensors available.

