

# PET FEEDER

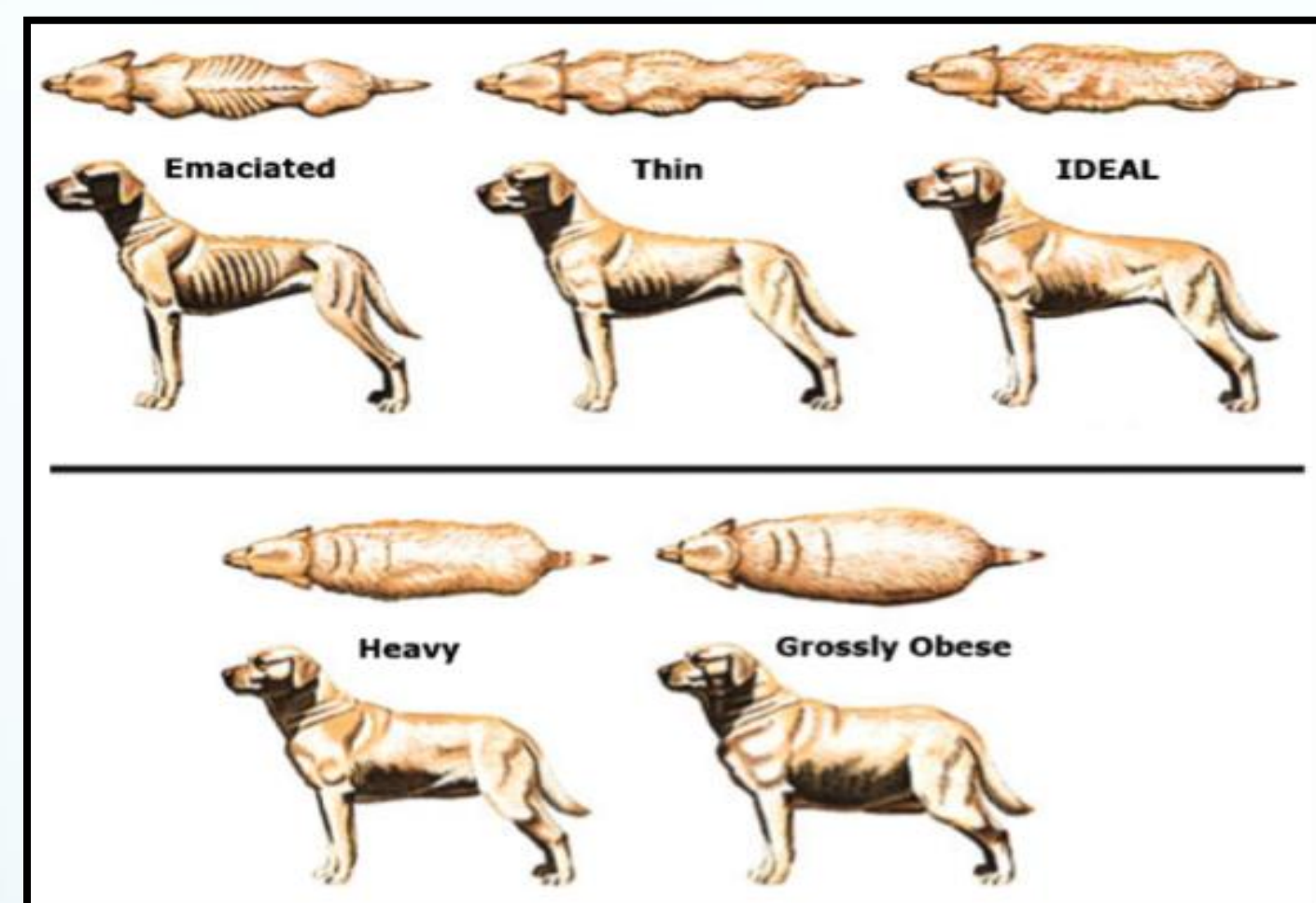
## Your Next Generation Pet Feeder For A Healthier Friend

Project Advisor: Terry Wang | Industry Sponsors: Dr. Maria Bromme & Dr. Ashley Dewey

### BACKGROUND

Veterinarians estimate 52% of dogs and 57% of cats in the US are overweight. The main reasons are:

- Most pet owners are unaware of the food portions to serve their pets corresponding to their ideal weight and size.
- Even when advised by a veterinarian, pet owners fail to administer the recommended supplements for their pets.
- Measuring food and dispensing supplements is tedious, time consuming and a messy task for pet owners.



### GOAL

Design and prototype a user friendly, mechanical pet feeder that meets the following:

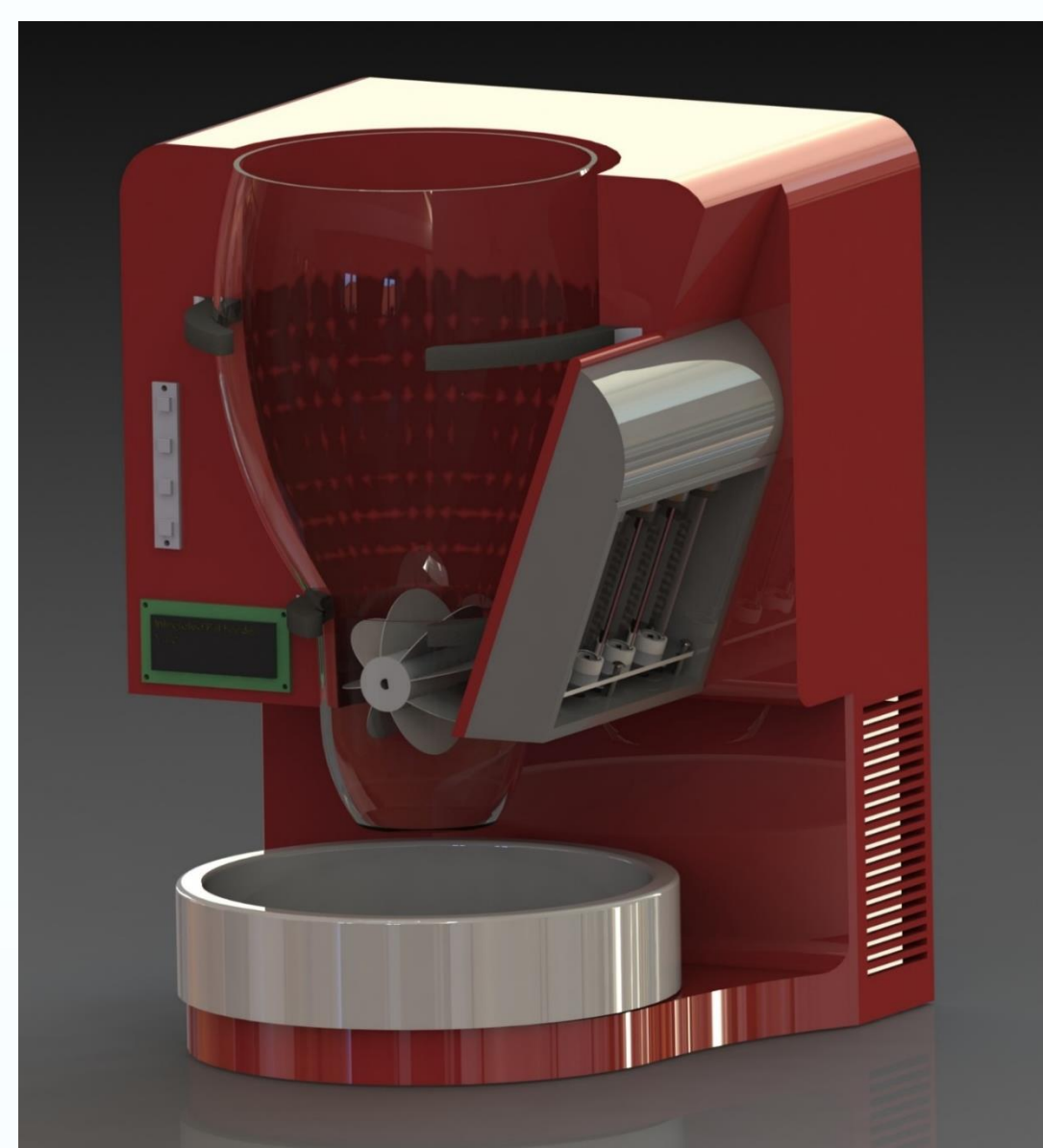
- Dispenses veterinarian recommended amount of dry food for appropriate pet sizes
- Dispenses veterinarian recommended amount of liquid supplements based on pet needs

### THE BIGGER PICTURE

Current pet feeders on the market do not address supplement dispensing and often have an inaccurate way of dispensing food. Our design will provide pet owners with an accurate and easier way to dispense food and supplements with the aim to keep pets healthier and happier.

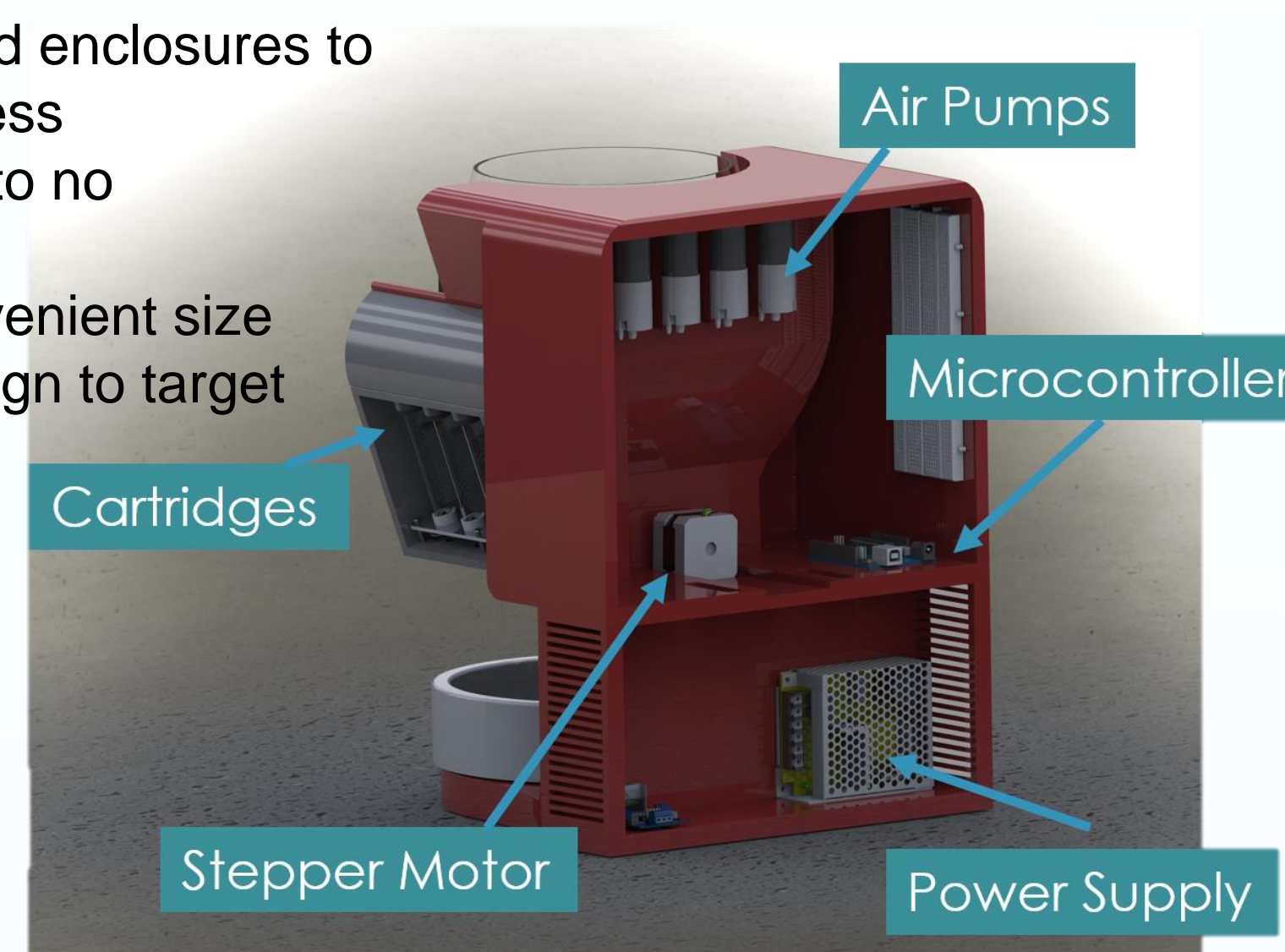
### INNOVATION & DESIGN

Our target customer is the person who considers their pet a family member. Someone who wants to be able to monitor their pet's diet and well-being closely without too much effort; someone who appreciates practicality, while at the same time wants to keep an appealing and attractive look for their kitchen.



#### Exterior Design:

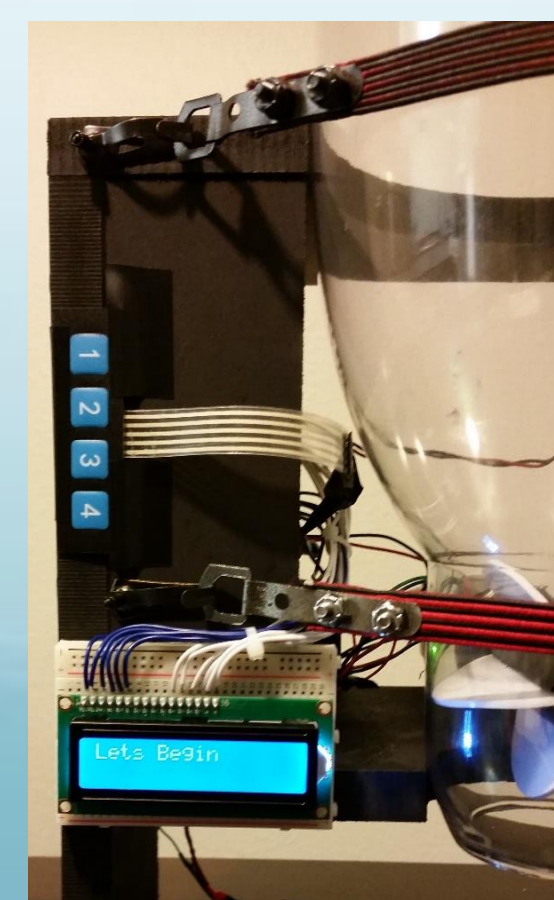
- Properly sealed enclosures to ensure freshness
- Requires little to no maintenance
- Compact/Convenient size
- Appealing design to target market



### CURRENT STATE

#### Control system:

- An Arduino is used to control the supplement and food dispensing mechanisms.
- There are currently four buttons for preset pet profiles, ranging from 4-60lbs.
- An LCD Screen allows us to see specific code commands when they are executed.



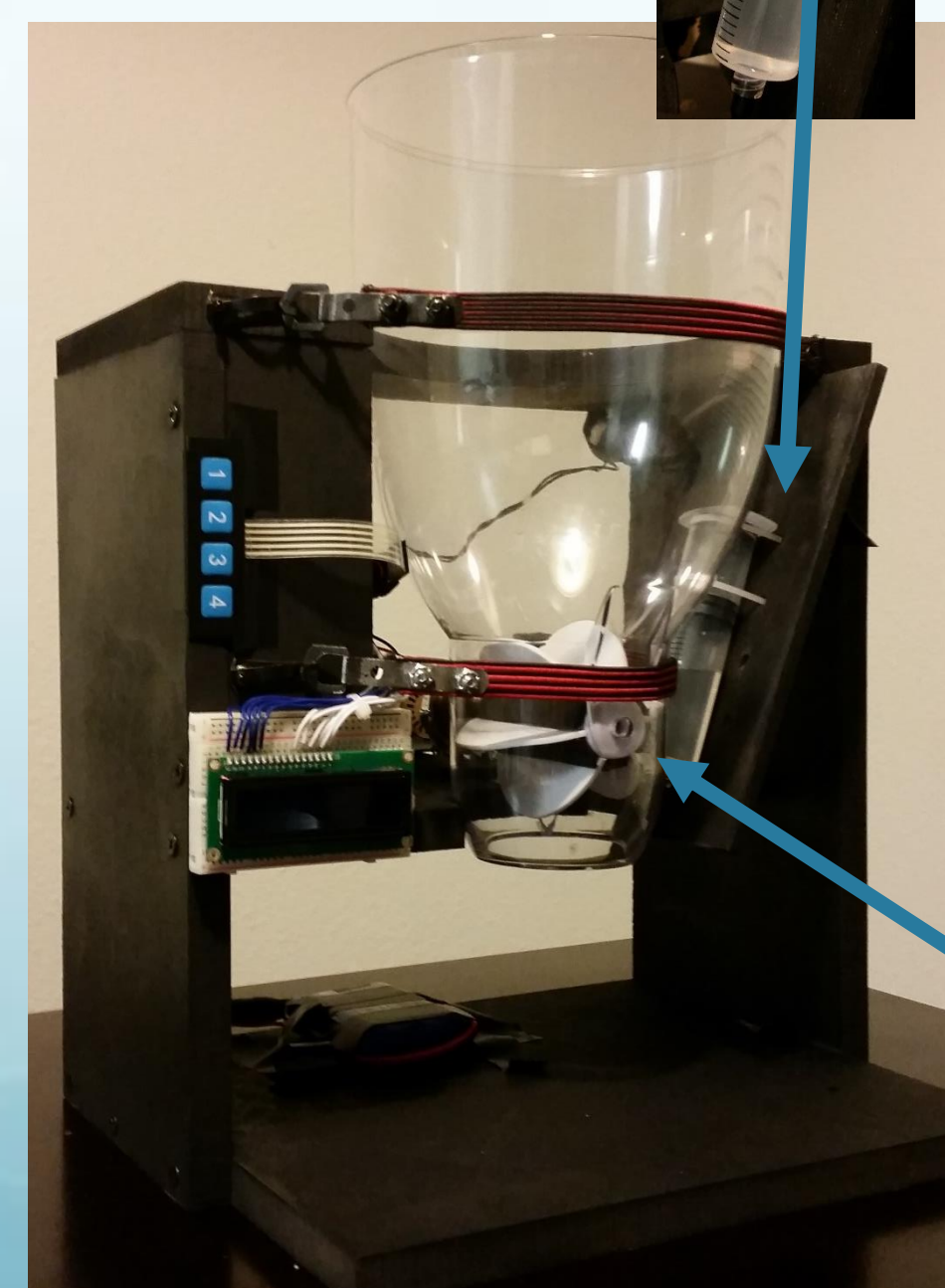
#### Supplement Dispensing:

- Consists of a sealed cartridge (syringe) and a pump that outputs a constant air flow into the cartridge.
- A rubber piston inside the cartridge pushes fluids out when air pressure is applied.
- Dispenses 1 mL for a small size pet and 2 mL for a medium size.



#### Food Dispensing:

- The "starball" dispenses DRY food in increments or 1oz at a time.
- A 12V 2A stepper motor and a IR Sensor are used to rotate and track the rotation of the "starball."
- Removable food storage with capacity for up to 4lbs



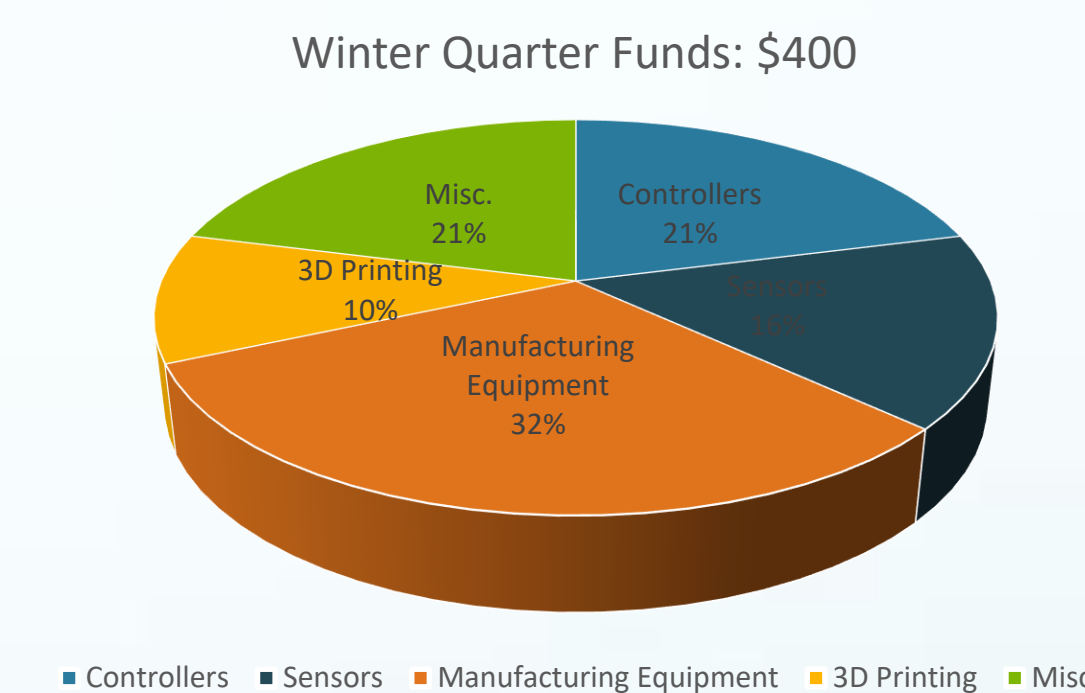
### TIMELINE



#### NEXT STEPS:

- Delivery of fully manufactured exterior via injection molding, and a perfectly functioning prototype.
- Implementation of supplement dispensing mechanism, with replaceable cartridges for up to 4 supplements that can be purchased separately.
- Integrate human interface to input multiple pets' information (name, weight, supplements)

### BUDGET



Total yearly cost: \$1200

### TEAM



Left to right:  
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