

Mechanical Engineering

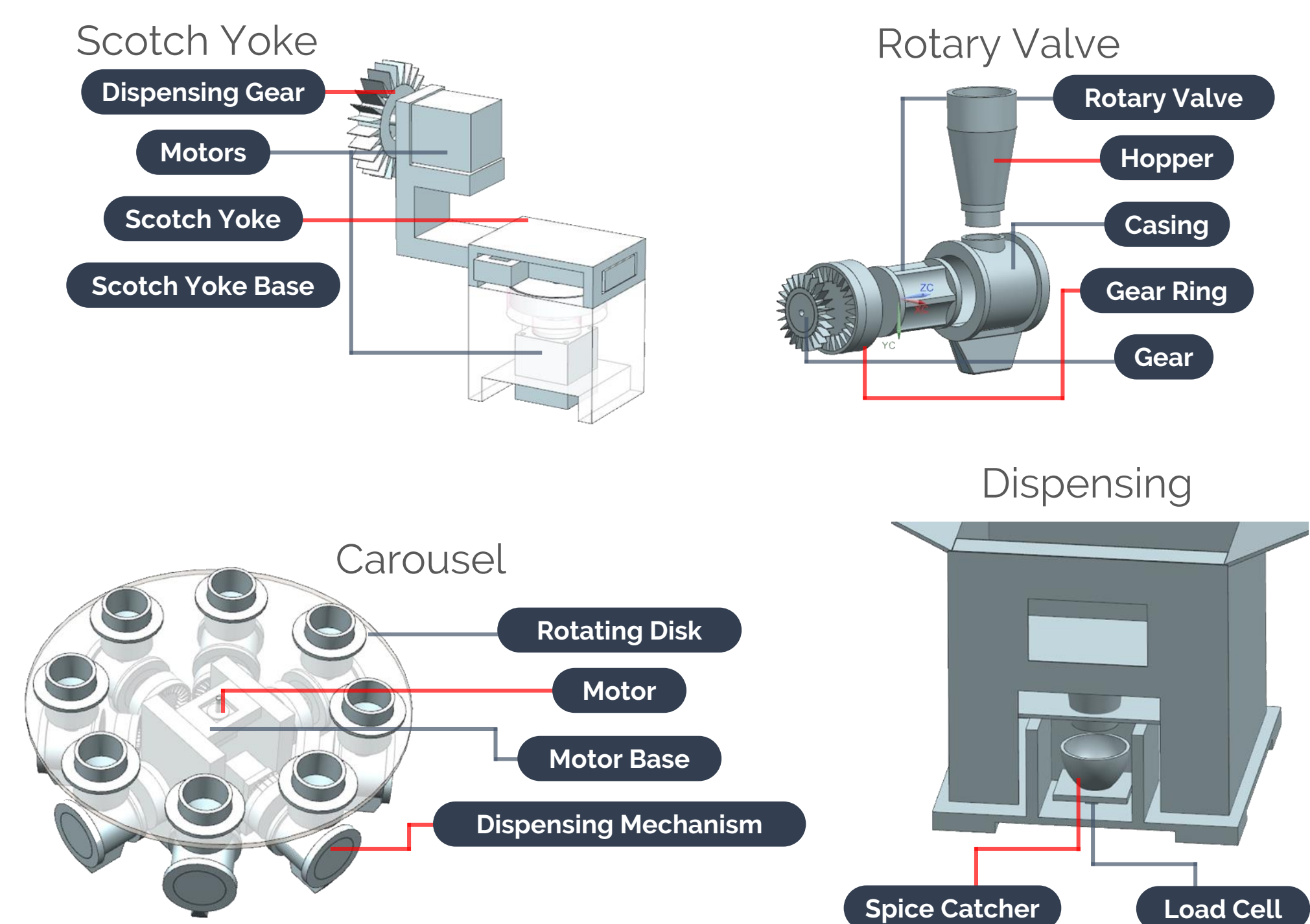
Patrick Milano • Sean Lipinski
Victor Wang • Yash Patel

Advisor: Dr. David Orloff

Mechanical Functions

● Storing ● Dispensing ● Weighing

Mechanical Mechanisms



3D Printed



\$12.00

- > Rotary Valve
- > Scotch Yoke
- > Motor Stand
- > Gears

Materials



\$17.50

- > Wood Frame
- > Hopper Mounting Disk
- > Epoxy Glass

Hardware



\$30.50

- > Bearings
- > Fittings
- > Hinges
- > Brackets

Future Work

- 1 Capability to change container sizes
- 2 Different design model for commercial application
- 3 Ability to clean the rotary valves
- 4 Capability to change the number of containers

Canelle

The world's first spice dispensing machine designed to automatically mix spices and create your favorite recipes at the push of a button.

What Does It Do?

The automated spice mixer is capable of storing up to eight spices with various textures (crystals, powders, flakes) and dispense each spice with high precision.

Supported Spice Types



CRYSTAL

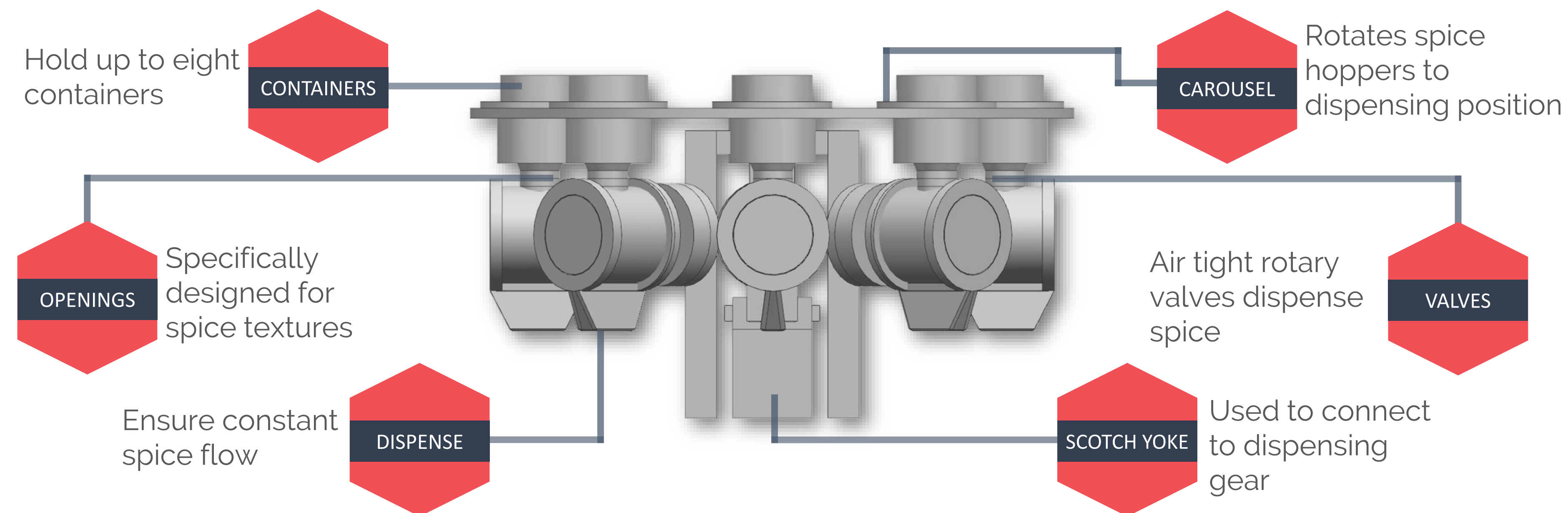


FLAKES



POWDER

Design Highlights



Features



Auto Dispensing
Predefined recipes conveniently dispensed



Cloud Integration
Real time synchronization with database



Unit Conversion
Seamlessly convert between volume and mass



Precision
Accurate to tenth of a gram up to 780 grams

Industry Applications



Culinary
Dispense and mix spices on a commercial scale



Pharmaceutical
Automate patient's daily dosage of medicine



Agricultural
Dispense pesticide and fertilizer mixes on a large scale



Manufacturing
Seamlessly mix various powder mixtures

Mechanical Components
\$60

\$260

Motors and Electronic Components
\$200



Electrical and Computer Engineering

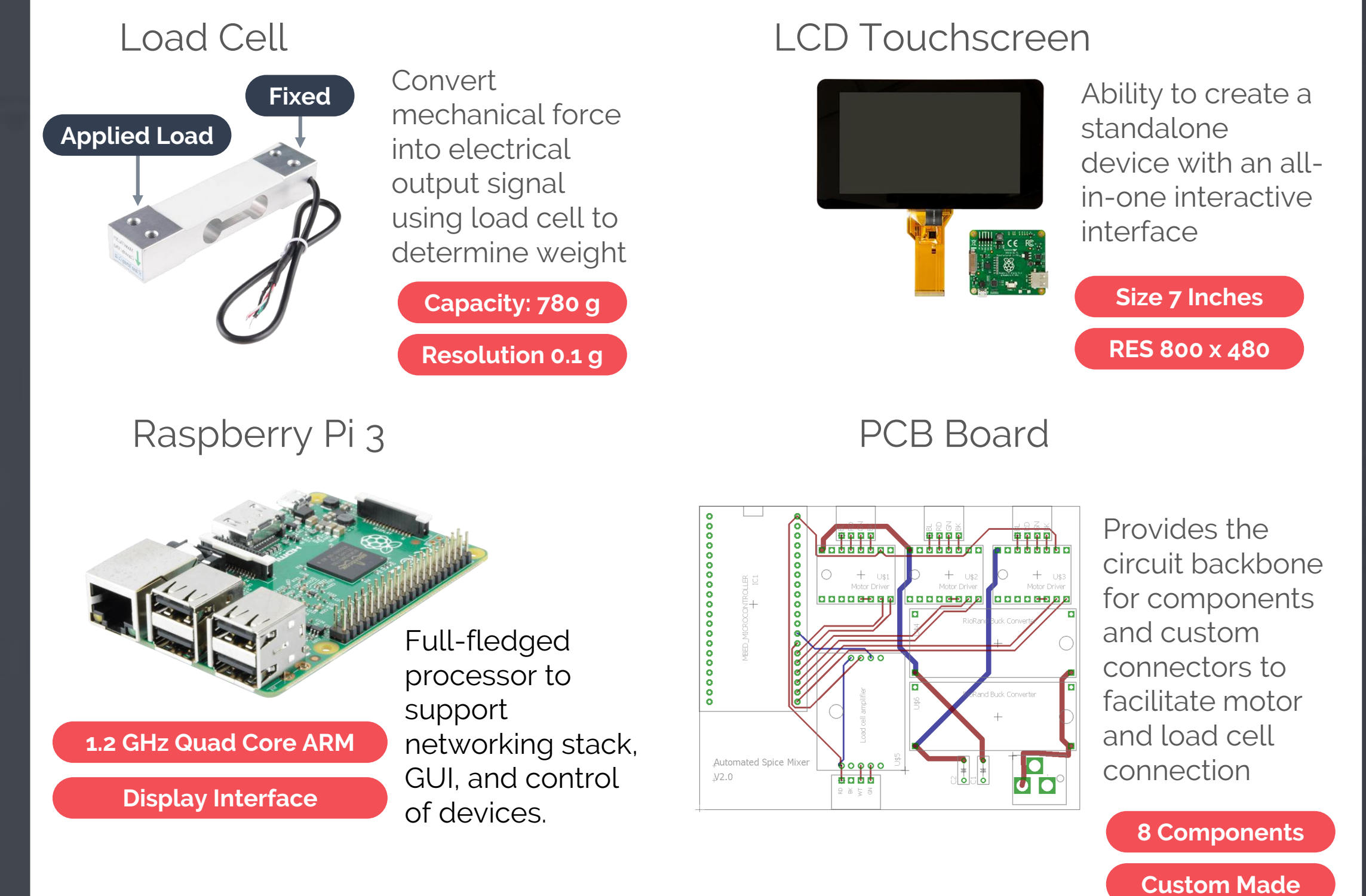
Michael Kuchnik • Philippe Laban
Ratchapong Tangkijvorakul • Sunny Patel

Advisor : Dr. Thomas R. Collins

ECE Functions



ECE Mechanisms



Motors/Power



\$78.00

- > Stepper Motor
- > Motor Shield
- > Buck Converter
- > Power Supply

Hardware



\$22.00

- > Printed Circuit Board
- > Load Cell
- > Load Cell Amplifier

Devices



\$100.00

- > Raspberry Pi 3
- > MBED
- > 7" LCD Touchscreen

Future Work

- 1 Data mining from online recipes
- 2 Computer vision to improve dispensing precision
- 3 Push notifications to mobile application
- 4 Full control via web application