

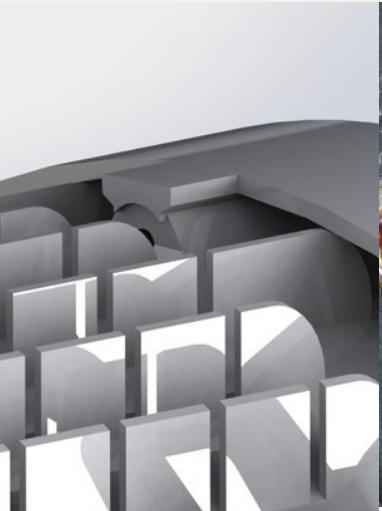
Jack Martinez

Portfolio of Design Work

Research & Design Projects



Endogenic Soy
Sauce



Motors Redesign



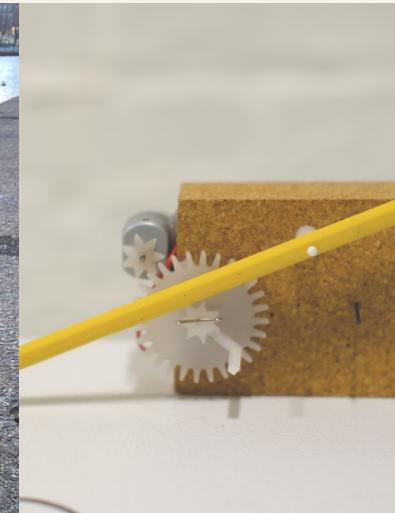
Spice Pods



Gentrification Research



Shrink-fit Travel Mugs
Tools



Empathy v. Self-Interest



Gender Time Capsule

{ An NC-Grown Soy Sauce }

A photo of the farm and researchers who provided the NC-bred soy, at the source farm.

www.ces.ncsu.edu/2023/09/national-extension-specialists-collaborate-to-help-soybean-farmers



Soy is one of North Carolina's largest agricultural exports, but mine is the first local soy product made from the land, for human consumption.



The soy jars about 2 months into fermentation

Boiling seawater to harvest salt.





Coastal NC Sea salt, NC soybeans, mold, soil, and wild persimmons, all found in North Carolina, combined with nine months of fermenting in a hand-thrown NC clay jar. The soy sauce shows my passion for whole, local foods, and the land which makes it possible.



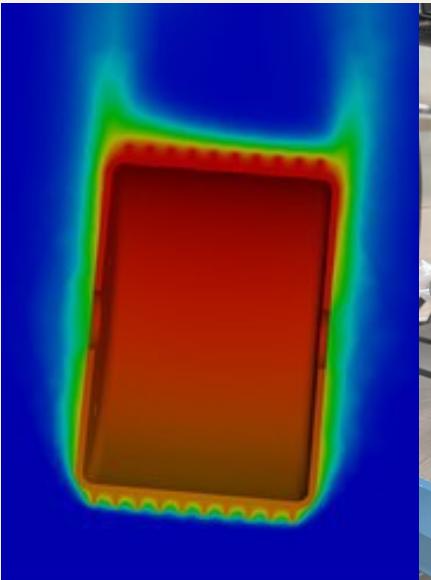
Boiling salt from seawater





Early brand - match concept sketching

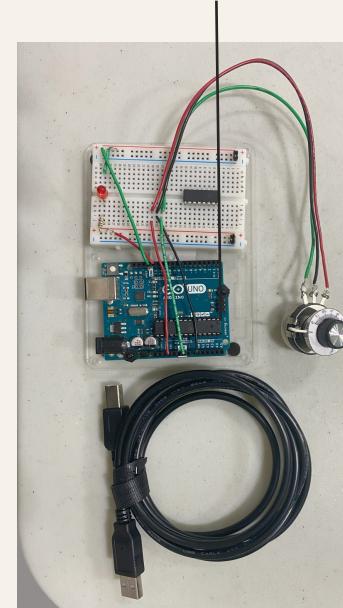
thermal simulations and testing



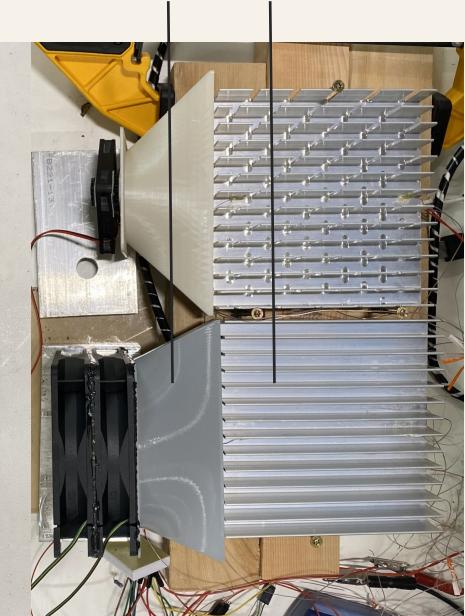
Motor Testing & Redesign

A summer internship at ABB tasked me with redesigning a next-generation of thermal motors. Research spanned from breaking down current models to thermal simulations, printed/machined prototype, and thermal tests.

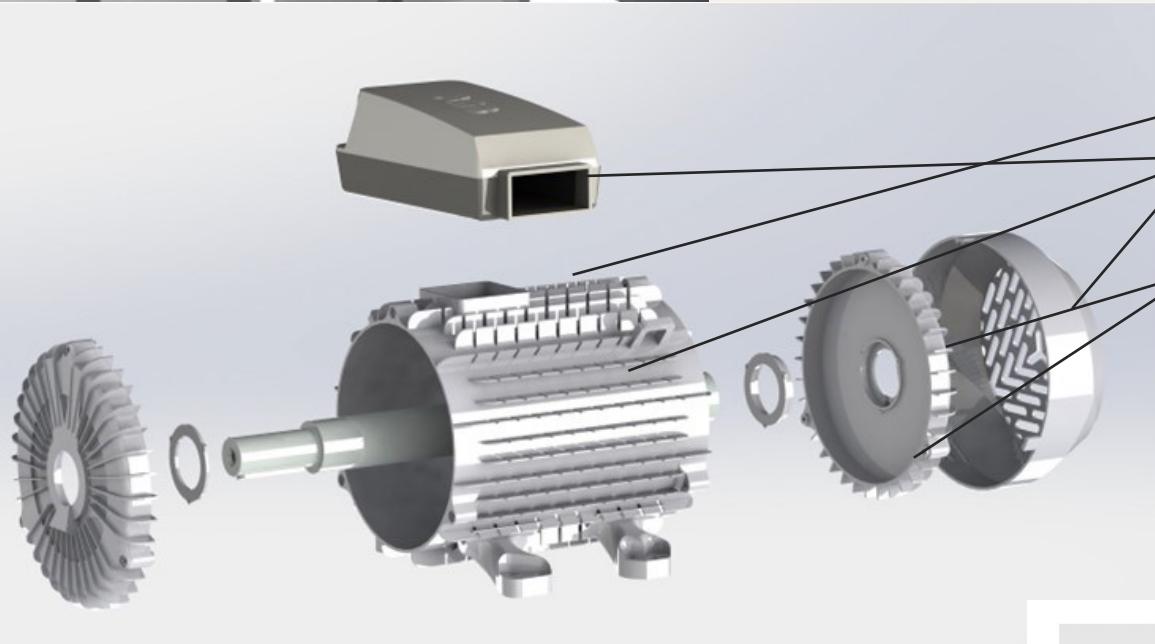
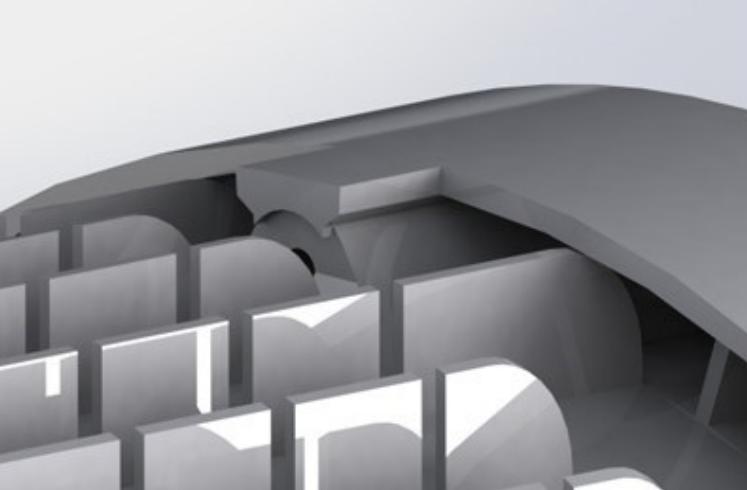
Arduino controlled power converter



3D printed and milled thermal flow prototypes.



{ Motor Design and Testing }

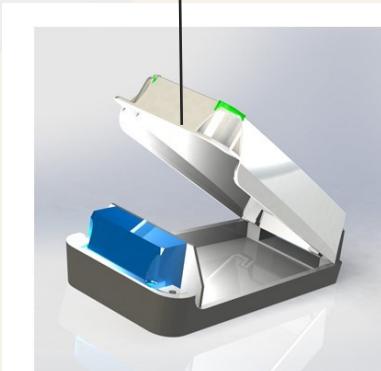


Increasing thermal efficiency

the future ABB aesthetic

decreasing manufacturing costs

Integrated control box with light bridge for waterproof monitoring



The final design was selected for a Stage - 0 research inquiry by a full - time engineer.

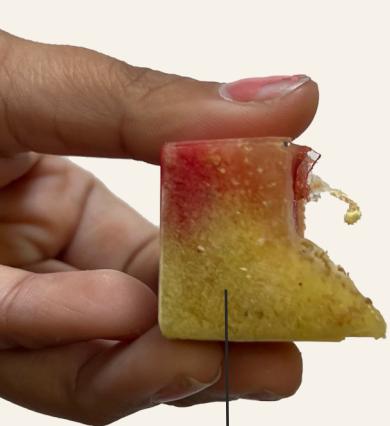
Opening with Blue to indicate Sensor Space

bourse Design

Simplified 2-Bolt Enclosure Design

{ Spice Pods }

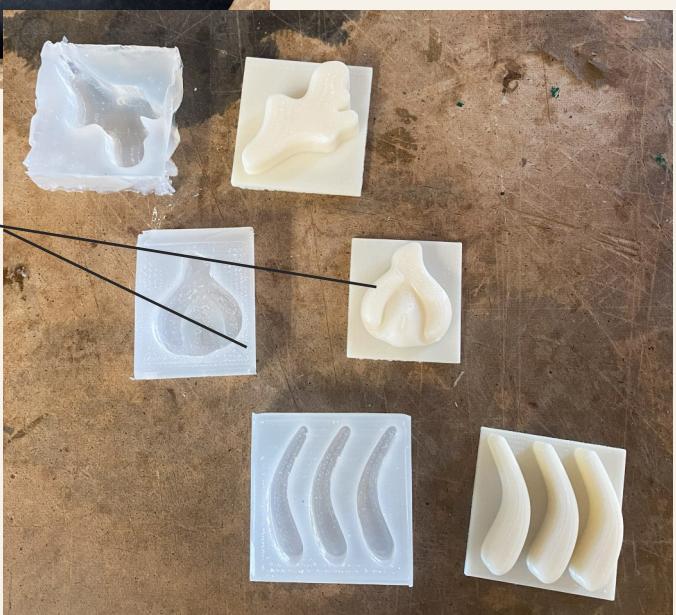
The challenge was to use ginger to create a tool for quick - start cooking.



molded prototype

We created edible organic spice pods sealed in alginate films.

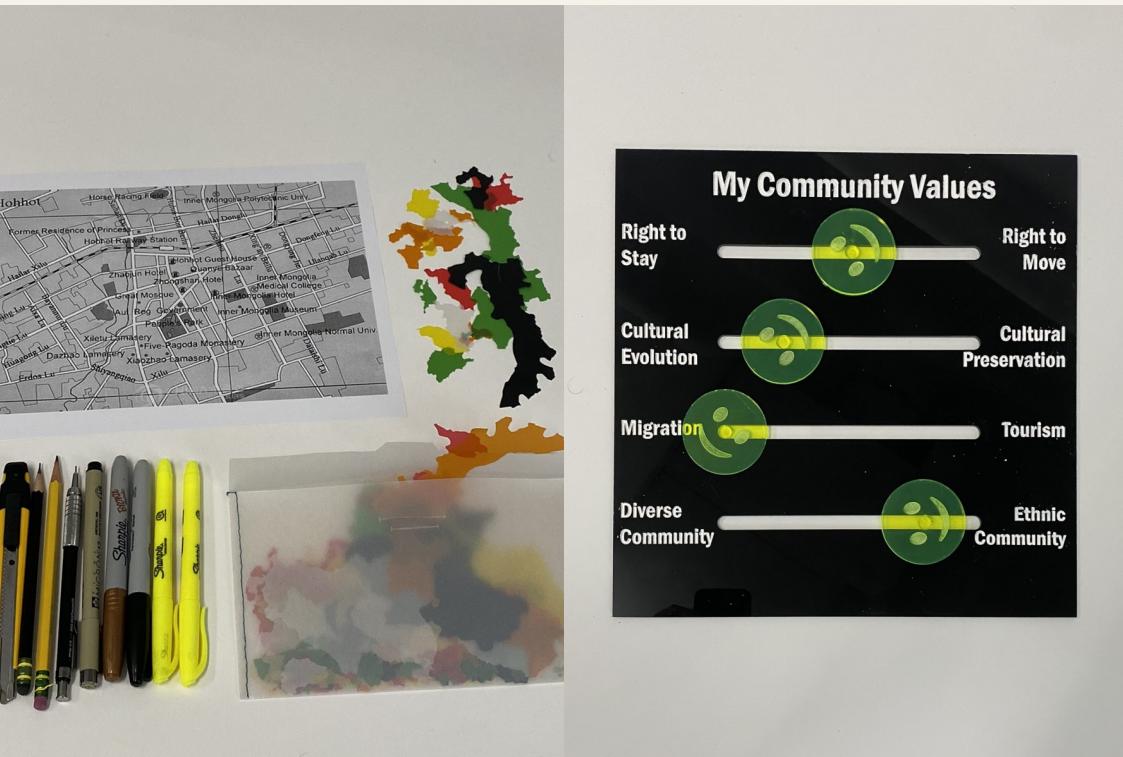
3d printed and rubber cast molds for spice pod fillings



Dehydrating whole ingredients and testing spice forms



Folklores of Gentrification



Tools built for research around cultural understandings and stories of gentrification.

Very willing participants building their maps of gentrification in their hometowns and using a simple engagement tool to engage with their community values.



What is gentrification? Is it even something that can be legislated? A word so charged in the cultural zeitgeist can only be thoroughly explored by engaging with the communities affected directly.



Travel and handmade have not really been well-meshed, handmade means irregular, which, when each clay has a different shrinkage ratio at each stage of production, makes it hard to create a leakproof seal.

{Press-molded} Travel Mugs}

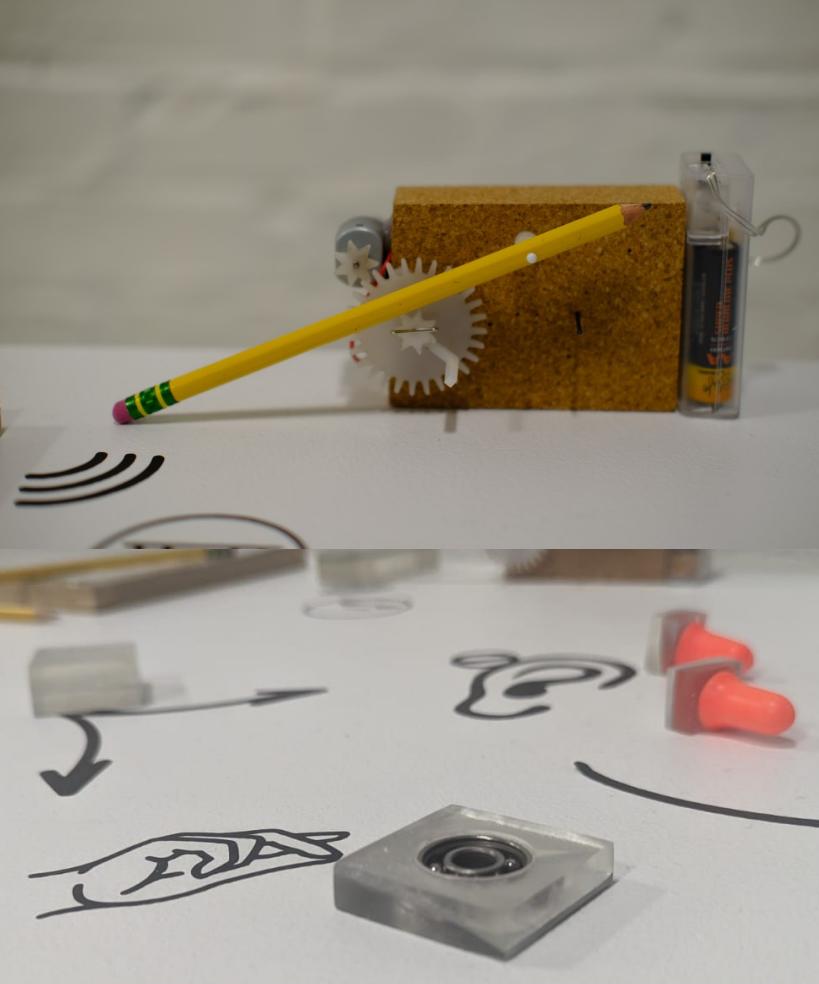
shattered ram-pressed mold



The lid fits smoothly onto the handmade mug, allowing unique carvings on a leakproof handmade form.



{ Empathetic Materials }

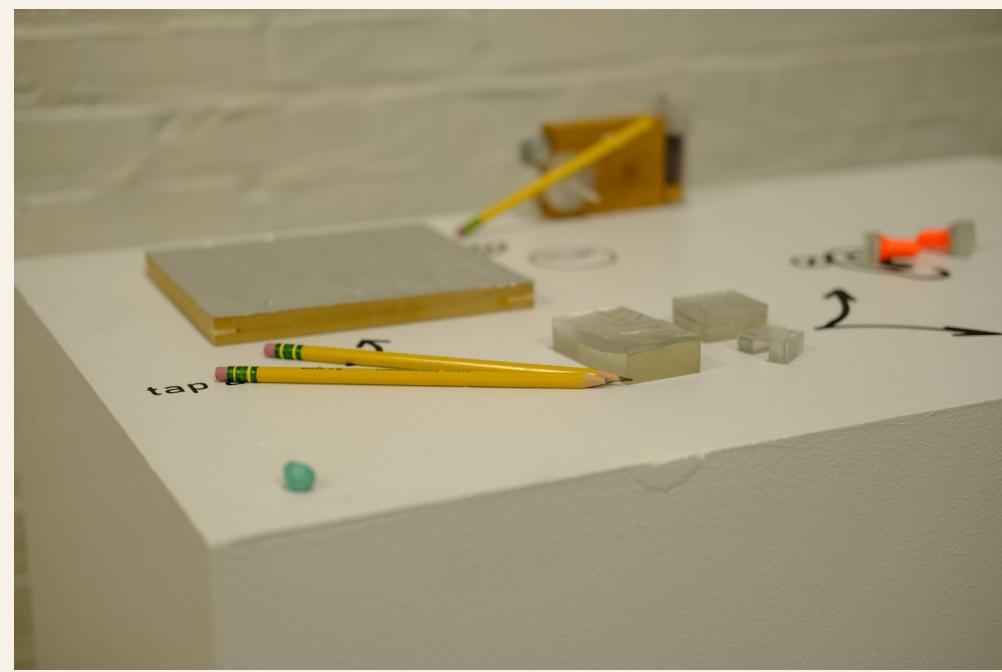


Based on identifying weak signals of increasing attention to empathy, I interrogated the theme of Empathy.

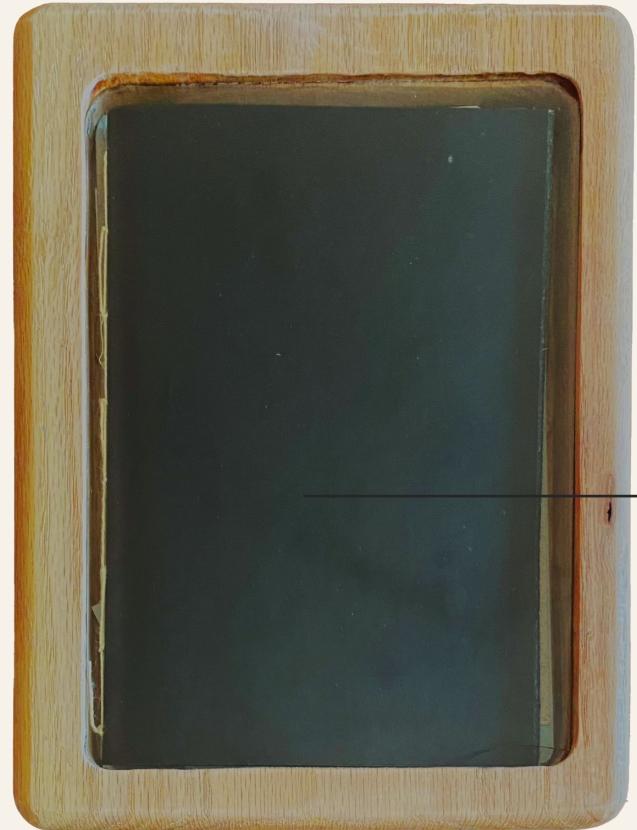
Mapping revealed a dichotomy between Empathy and Self-Interest, especially in Domestic and Emotional Labor.

Materials exploration revealed a way to demonstrate this issue. The tap-tap-tapping in class helps the tappers focus, but distracts everyone else, prioritizing self-interest over empathy.

In instillation, a 'tapping machine' was installed to demonstrate this tension. These artifacts, earplugs and a fidget spinner, are made out of resin-cast impressions of pencil tapping, and display rough-fit solutions to these social issues.



{Gender Time- Capsule}



A black vellum jacket obscures the cover so that even the author can lose some memory of its contents over time

Encapsulating a semester's research on gender identity, comprising ethnographic research and folklores into a contemporary understanding of gender identity. I document how gender was viewed and discussed in 2023 through dozens of artifacts and contemporary accounts.

Encased in a solid oak, only accessible by shattering the protective sheet of glass.

Artifacts from 2023 serve as a flashback as our cultural understanding of gender complexities over time.

