



College of Engineering
UNIVERSITY OF GEORGIA

Final Project Proposal

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Electrical and Electronics Engineering



Sensor Problem

One of my favorite foods is bar-b-que, so naturally, I enjoy smoking various meats such as pork butts, brisket, and baby back ribs. One of the most important parts of smoking any meat is controlling the temperature of the grill and taking the meat off the smoker at the proper temperature. With older smokers that do not cost thousands of dollars, this typically requires staying up all hours of the night to constantly tend the smoker to prevent run away temperatures or dying fires. The sensor problem I want to address is sensing both the temperature of the meat and food to automate the grill process. My proposed sensor system should do the following:

1. Sense the temperature of the meat and grill
2. Fan the fire to increase temperature on the grill
3. Limit or stop air flow to the fire to maintain temperature or decrease temperature on the grill
4. Stop air flow when the meat reaches the proper temperature.

This sensor system will utilize two RTD's to sense the temperatures. It will then use circuitry from lectures six and eight to input a signal into Arduino Uno to process the temperature signals into commands to a small fan to control the smoker's air intake. By using a small fan, the air intake to the smoker will be sufficiently small enough to limit air intake enough to sustain rising temperatures.

Bill of Materials

<u>Major Purchase Items</u>	<u>Possible Vendors</u>
Food Probe (RTD)	Amazon, DigiKey
Smoker Temperature Sensor (RTD)	Amazon, DigiKey
Arduino Uno	Amazon
1" Circular Fan	Amazon

Timeline

October 31st – All hardware obtained
November 14th- Signal Processing, Actuator Circuit Complete
December 1st- 1st draft of code complete, Begin Testing of Full System
December 3rd- Testing and Revisions Complete
December 10th- Presentation and Report Complete