The goal of our project is to create a functioning thermoelectric generator that can charge an electronic device through the use of heat transfer from a wood-fueled fire to two Thermoelectric Modules (TEMs) and the subsequent power generated to charge a 14.8 V, 50Wh battery.

Thermoelectric generators are solid state devices used to convert heat and temperature gradients into a DC power source via the Seebeck Effect. By creating a temperature difference utilizing a heat exchanger system to transport heat from a fire while also isolating the cold side of the TEMs with a heatsink and fan, a stable power source can be produced to continuously charge a battery. After sufficient time the battery will reach a full charge and will be able to supply energy to a number of electrical devices. The product as a whole provides a renewable energy source utilizing only the energy produced by a campfire.

The Final Design is composed of the heat trap component and the main body of the system connected together by two copper heat pipes.

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