

Abstract Submitted
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Developing an Apparatus for Investigating Radiation Heat Flow¹

WADE COOKSTON, CALVIN BERGGREN, Texas Lutheran University — Conceptually understanding radiation heat flow can often be difficult, because it is a unique type of heat flow. This difficulty in understanding calls for a means of effectively demonstrating radiation, and allowing students to explore it as well. In order to do this, I constructed an apparatus that allows for the development of experiments that explore radiation. Our first experiment that is in development focuses on testing the effectiveness of reflective insulation under various conditions. One of the primary benefits of this apparatus is the diverse number of potential experiments that the users would be able to partake in through the use of temperature sensors to map the temperature inside the simulated attic space, varying the environment in which data is taken, and taking data with other various sensors (e.g., light atmospheric pressure, etc.). There is also a large potential for datamining, which will allow for students to practice not only collecting, but also handling and analyzing large swaths of data. Going forward, conducting this experiment and developing others will be the topic of my senior thesis.

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Wade Cookston
Texas Lutheran University

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