



Gordonville High School

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Mark Medley
Principal

To whom it may concern,

As a participant in Tennessee Technological University's RET, I did not know what to expect. I was a complete novice not having the opportunity to conduct research with my teaching responsibilities.

During an intense first week we were presented with the current research being done and a crash course on research methodology. My question started out much too broad but with peer and mentor review I was able to get a workable question. The mentors understood what novice researchers can accomplish and helped shape the scope of the research without interfering with the fundamental ideas that peaked my interest in the project. This expert guidance increased my confidence as a researcher. I felt like I had valuable ideas to contribute.

As a direct result of my experience in RET, I have a Legacy unit that incorporates the thermodynamic standards in physics. I am much more knowledgeable in thermodynamics and heat transfer because of the rigorous summer research. Another advantage of this program is the direct correlation between the conceptual fundamentals of heat transfer in casting and the physics standards for thermodynamics. My students will also perform some trials with my instrument for determining the thermal conductivity of the casting sand. This unit will provide a real-world context for thermodynamic concepts in my class.

However my RET experience is more pervasive than the specifics used in heat transfer. I use the method of gathering data from trials and analyzing it in most of my physics activities. I have also changed some of my chemistry labs so that the students have to figure out a procedure from doing tests of ideas and adjust the procedure to the results.

The RET has allowed me to convey to my students the process of science. I now talk with understanding and passion about the research process and the students understand and have more interest in science careers. I have more students interested in pursuing engineering and science careers this year than ever before.

I have been a part of MSP projects which were very good, but the structure of the RET program allowed me to pursue a subject to a much greater depth. I was able to experience first-hand what it is like to be a research scientist. Starting with the early frustrations stemming from efforts to develop a question to the thrill of designing a working prototype, this experience has helped me identify with engineers actively engaged in research.

Anthony Geist

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