The Roots of the STEMs

In recent years, attracting students who major in the sciences and math to study Greek has shown promise. There has been a growing interest among educators and philanthropists to explore ancient engineering, technology and science, and this new interest has been noticed by students and staff outside of classics departments. To offer several very obvious examples, over the past five years, several online education companies have published courses that focus on Greek science, several museums of ancient Greek inventions and music have opened in Olympia and Ilia, Greece, and very recently, a privately funded group opened the new Galileo museum in Florence, Italy, which is dedicated to the history of engineering and science from Greece through the middle ages.

Using this new interest in Greek science as a starting point, this paper will offer several examples of courses, research, and lessons plans that have had success in attracting students majoring in the STEM areas. Central to these courses and lectures—the common thread—is the notion of the Greek bequest to the modern world. Modern science rests upon the Greek understanding of science and the discoveries of the Greek philosophers. The ancient Greeks have offered the modern world both the universal understanding of science and the particular use or application of those universals. Several key ideas of these courses and lectures are:

1. Aristotle's four causes
2. The Origins of geometry and trigonometry
3. Euclid and basic mathematical principles
4. Archimedes' inventions

One course that I have taught every summer for 15 years where these four key ideas play a prominent role is titled "It's All Greek to Us". This course, a senior seminar capstone (typically

24 enrolled), addresses Greek science in nearly 10 of the 42 contact hours. The theme for the science section is Technology vs. science and the provability of Aristotle. Examples of these lectures will be made available online.

The second course in which STEM ideas occur is elementary Greek course. In this course, the proverbial sayings from Crosby & Schaeffer's Elementary Greek text have been extracted and greatly expanded, especially the passages from Euclid. These expanded passages are then presented to the students for practice in reading. By expanding these sayings, students begin to see the relevance of Greek thought on their own discipline. This expanded list of sentences will be provided on the handout.

The third course—or research program—concerns applied research; another high value area for students in math and science. Designed for mid-level Greek students, this research program uses a text of the history of Rome from a late Byzantine author named Paeanias. Students are required to create concordances and word analyses of the text in the hopes of collecting enough information to offer various hypotheses about the purpose of the text and the nature of themes presented by him. Samples of the students' work will also be provided on a handout.