Kearse, Kelly
Ph.D., Immunology, University of Kentucky, 1988
Science Instructor, Knoxville Catholic High School, Knoxville, TN
kelly.kearse@knoxvillecatholic.com

Following completion of postdoctoral fellowships at Johns Hopkins and NIH, Kelly became a Principal Investigator at NIH. After several years, he transferred to the ECU School of Medicine to have the opportunity to do both research and teaching. In 2000, he semi-retired from laboratory research to relocate to his original hometown and teach high school science, something that he had always wanted to do. He has been a science instructor at KCHS for the past 20 years. Kelly studies the Shroud as a subject important to both faith and science, with a specific interest in the properties of the bloodstains.

ABSTRACT

Hemolysis, bilirubin, and the color of the bloodstains on the Shroud

Various mechanisms have been proposed to explain the molecular basis for the anomalous reddish color of the bloodstains on the Shroud. For example, Rogers proposed that Saponaria-treatment was performed as part of the normal processing steps during linen manufacture, leaving a surface residue on the Shroud that retained hemolytic activity. He noted that blood added to Saponaria-treated cloth maintained a reddish color some thirty years later, compared to controls which were black. Unfortunately, no data or pictures from these experiments have ever been published. Adler, on the other hand, suggested that high amounts of bilirubin present in blood exudates are responsible for the reddish color of the bloodstains, resulting from heightened hemolysis in vivo due to excessive trauma. He reported that he could mimic the reddish color of blood on the Shroud by creation of a blood simulacrum in vitro, containing increasing amounts of bilirubin. However, no data or pictures from these experiments were ever published. In this study, I examined the effect of various hemolytic agents on the color of bloodstains, including Saponaria obtained by various processes. In addition, I describe the influence of various forms and amounts of bilirubin and discuss these findings related to what has been reported for the Shroud.