Improving Documentation and Treatment for Patient Care Utilizing a Cell Phone Algorithm to Quantify Wounds in Three Dimensions

Browne, Abigail (School: Conrad Weiser High School)

This work focused on applying existing cell phone technology as a cost effective innovative tool for wound measurements. Precise wound measurements are utilized for medical records, documentation, and patient wound care. Current methods are restrictive, produce inaccurate results, and are often expensive. In this study, a cell phone camera was used to acquire wound images from multiple perspectives. A three dimensional representation of the wound was then created from the acquired images for accurate wound characterization and documentation. Data can be exported for further manipulation to improve wound analysis and documentation of progress during treatment. In the field of medicine it is essential to have the ability to calculate wound measurements with time efficiency and accuracy. A formula was designed to evaluate the depth of a wound by triangulation of multiple fields of view. This equation calculates the depth of the wound by aligning precisely on a focus point and determines the proper angle and length from which a wound should be imaged. This research has the potential to increase wound measurement accuracy aiding in documentation and treatment of wounds.

Awards Won:

University of the Sciences in Philadelphia: Tuition Scholarship of $9,250. per year for four years.