H61 The Complete Forensic Anthropology Application for Smartphones and Tablets

Melissa Munoz, 621 Skyline Drive, San Luis Obispo, CA 93405*

After attending this presentation, attendees will understand how to navigate a software application for smartphones and tablets which allows users to complete a biological profile of an unidentified individual. A trial of this software application program will be available following the presentation.

This presentation will impact the forensic science community by providing the necessary tools for a forensic anthropologist to complete a biological profile in the new age of technology. One of the most important steps in the scientific method is the retesting of ideas. Professionals will not only have access to the most used methods in the field but some of the newest ways will also be included so testing can be done. This library of reference material will be used to connect all professionals in the field together to share information and methods.

Is it time for identification technology to be in the palm of your hand? The answer is yes. In the modern world, information is no longer being shared through paper and pen but has been converted into a digital format. For example, the television signal has been changed from analog to digital and books are being downloaded and read on tablets. It is important that the different professional fields also keep up with these technological changes that occur in the world. Previous software only covers one area of the biological profile at a time. It is hoped that the combination of all the methods into one place will allow easier testing and completion of biological profiles in the field or morgue settings.

Forensic anthropologists compose a biological profile of skeletal remains of an individual in the hopes that identification can be made through the estimation of the age, sex, ancestry, stature, and any trauma that occurred to the individual. For each of these areas professionals have devised multiple methods using various skeletal areas to make estimations for identification. The goal of this app is to bring all the methods which are used to complete a biological profile and condense them into one easy to use location.

The program is divided into five sections: skeletal inventory; age assessment; stature assessment; sex determination; and ancestry determination. The skeletal inventory section allows for a quick evaluation of the bones that are present to take place. With a simple click, not only will the inventory become complete but a mapping of the fetal, subadult, or adult skeleton can be done.

The age assessment section examines methods for both subadult and adult calculations. Charts set up with one-touch selection allow for easier estimations to be done. The stature assessment employs the major methods used to calculate both whole and fragmented bones. Mathematical calculations are often tedious and with all the different units of measuring, can be confusing. This section allows the user to input the measurement taken for various methods and will present the estimated height of the unknown individual. The sex determination section allocates the methods for determination based on analysis of the pubic and cranial bones using an interactive guideline. In addition, new methods that analyze shapes, angles, and measurements of various long bones will be included.

The ancestry determination section uses image manipulation which contains standardized tools to allow for magnification and scrolling for better visualization of the skull reference to be compared to the case. Analysis of the data based on the individual is estimated and an output screen displays the final calculations depending on the method chosen.

In this presentation, a walkthrough and examples of possible uses of the app will take place. Members in the audience will be given a beta test of the app which will be available for six months after the presentation. The goal of the beta test will be to test the usefulness of the app with professionals in the field. Once a month, a questionnaire will be accessible to users of the app to hear what works and what needs to be improved. Once all the available data are gathered and all glitches are fixed, a full app will be launched. The ultimate goal of the application is to be not only a guide for professionals in the field, but also a teaching aid to students.

Forensic Science, Forensic Anthropology, Software Application

 ** Presenting Author*