## H97    iFly: Mobile Software for Recording Data From a Carrion Source or Death Scene

*Trevor I. Stamper, PhD\*, Purdue University, West Lafayette, IN 47907*

**Learning Overview:** After attending this presentation, attendees will have a better understanding of the capabilities of iFly, a new mobile application for recording data from carrion or death scenes, with a focus on forensic entomological specimen collection and Total Body Score (TBS) estimation. Decomposition scenes rich in entomological material present numerous data recording and preservation challenges. Because of this, most entomologists construct their own "scene data sheets" to record what they consider to be necessary data. iFly was created to provide a flexible digital platform for recording this data from the scene and for sharing data between users in a standard format.

**Impact on the Forensic Science Community:** This presentation will impact the forensic science community by showing how a mobile application for forensic entomological and TBS data collection can assist in research projects or cases.

iFly integrates a customizable scene documentation system, device enabled "hidden" photography, remote weather station data acquisition, a proof-of-concept built-in visual key system, and precise annotation of sampling location for multiple types of instrumentation (temperature, humidity, wind speed, light level, invertebrate samplings, etc.). Three standard models—domestic pig, human male, and human female—come pre-built into iFly. These standard models allow for concise annotations that reflect the underlying anatomical body locations unique to each model. Tagging samples to the underlying anatomical position on the body allows for the automated acquisition of body location along with specimen or feature documentation—creating the potential to move forensic entomology further into the "big data" future of data analysis. To facilitate this, a MATLAB® utility was created to allow for the customized creation of new body outlines (which would then need to be curated by the iFly team). iFly allows the user to create their own environmental parameters for data sampling and allows the user to compute decedent TBS from the in-application evaluation of photo evidence, as well as the opportunity to identify some entomological specimens using a proof-of-concept built-in visual key.

Cases can be organized around any number of single- or mixed-model assemblages using the default models in iFly. Each model can then be tracked through any number of sampling events. This allows for complicated research set-ups, multiple victim events, or the precise collection of data for carrion ecology student projects at user-defined time increments. Scene data collection layouts can be formatted as a template to conform to pre-established standard operating procedures, allowing for many users to record the same data. iFly allows for the first-ever routine data exchange between carrion ecology or vertebrate decomposition researchers. Individual screens can be exported as .csv files, or the entire case can be exported for peer-to-peer transfer of cases on iFly enabled devices. Photographs imported or taken within iFly are protected from the normal iPad® camera roll, meaning they cannot be accessed from any other app on the device.

**Mobile Application, Total Body Score, Forensic Entomology**