A55 A Multidisciplinary Approach to Identification and Repatriation at Mount Austen, Guadalcanal

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After attending this presentation, attendees will understand how historical, spatial, archaeological, anthropological, genetic, and isotopic analyses are synthesized by the Defense Prisoner of War/Missing in Action Accounting Agency (DPAA) personnel to streamline identifications and repatriations from an extensively commingled Solomon Islands battlefield site.

This presentation will impact the forensic science community by illustrating how a multidisciplinary approach can lead to identifications and repatriations within a Commingled Human Remains (CHR) project. This multidisciplinary approach specifically provides a useful method for sorting CHR originating from numerous nations.

From December 1942 to February 1943, Allied troops attempted to dislodge an entrenched Japanese position at Mount Austen, Guadalcanal. As a result, Japanese, American, Australian, New Zealander, Fijian, and Solomon Islander combatants overlapped spatially. Many of these individuals experienced fragmentation-causing skeletal trauma, and burials, which may have prevented further commingling, were not performed. Additionally, the Mount Austen site is now more than 75 years old and current occupants modify the site daily. The general area is also characterized by steep slopes, and downhill erosion exacerbates fragmentation and commingling of human remains.

While all large and fragmentary CHR projects endeavor to re-associate numerous portions of multiple individuals, the Solomon Islands Unidentified Project (SUP) specifically struggles to distinguish American from non-American remains, often without the use of morphological traits due to poor preservation. To efficiently and economically approach this challenge, a process was developed to manage the large quantities of evidence recovered from this battlefield, streamline American identifications, and repatriate the remains of combatants from other countries.

A detailed review of historical and archival documents pertaining to the Mount Austen battlefield loss was first completed by DPAA historians. From these efforts, a list of missing individuals was generated — 19 United States service members among at least 900 unaccounted-for Japanese. Battle timelines and troop movements were next georeferenced to better understand the context of the loss incident. DPAA archaeologists use this spatial data to target the most likely areas where missing United States members could be, and subsequent surveys and excavations have resulted in seven large accessions of human remains; there are also more than 25 additional accessions in the laboratory from unilateral turnovers allegedly related to the same loss incident.

Once evidentiary materials are received by the laboratory, the project anthropologist separates biological from material evidence, administratively removes non-evidence, designates group remains, marks remains with provenience data, sorts skeletal elements by size, reconstructs, makes pair-match determinations, nominates for DNA guided by the minimum number of individuals, builds individuals by genetic sequence, synthesizes provenience data by individual, and considers the haplogroup of each genetic sequence. An East Asian sequence is repatriated to Japan, while a sequence matching a United States Family Reference Sample (FRS) is processed for identification. A Caucasian or inconclusive sequence not matching an FRS is nominated for isotopic analysis as isotopic composition may aid in separating an American from a non-American service member.

After various results are consolidated, the project anthropologist provides feedback for the Mount Austen site archaeologists. Specifically, they identify exact locations where possible United States remains have been found to increase the likelihood of recovering additional American remains during the next excavation.

At present, all SUP remains currently in the DPAA Laboratory have been analyzed according to this method with numerous repatriations performed, several possible American sequences identified, and specific battlefield areas targeted for additional recovery operations. Through a combination of historical, spatial, archaeological, anthropological, genetic, and isotopic analyses, efforts to locate and recover United States remains from the large, commingled Mount Austen battlefield site are progressing.

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Commingled Human Remains, Fragmentary, Identification