## H65 Archaeological Methodology Used at the World Trade Center Site During the 2006/2007 Recovery Excavation

*Scott C. Warnasch, MA*, New York City Office of the Chief Medical Examiner, 520 First Avenue, New York, NY 10016; Christian Crowder, PhD, Office of the Chief Medical Examiner, 520 1st Avenue, New York, NY 10016; and Kristen Hartnett, PhD, Office of the Chief Medical Examiner, Forensic Anthropology, 520 1st Avenue, New York, NY 10016*

After attending this presentation, attendees will be presented an overview of the archaeological methods used during the 2006/2007 Human Remains Recovery Operation at the World Trade Center (WTC) site. Additionally, some of the findings, including the relationships between the buried deposits of WTC material and human remains recovered during the excavation and specific situations and activities conducted during the 2001/2002 recovery operation that lead to their omission will be presented.

This presentation will impact the forensic science community by providing a body of information and protocols, developed and tested in the field that could be adapted to future mass disaster situations, built upon, and potentially used to improve recovery efforts, especially where a high degree of fragmentation is involved.

This presentation will provide an overview of the archaeological methods used during the ongoing Human Remains Recovery Operation at the World Trade Center site conducted by the New York City Office of Chief Medical Examiner (OCME) since 2006 and will discuss findings from the excavation. The topics addressed will include the archaeological methods used to identify, delineate and document the site, the identification of WTC debris patterns and their relationship to the recovered human remains concentrations, and what these patterns reveal about the original recovery effort that took place immediately following the terrorist attacks.

The primary objective of the WTC operation was to recover victims' remains and personnel effects for identification. The excavation also presented an opportunity to test which archaeological methods would be most effective in a large-scale mass disaster recovery operation. In addition, the archaeological investigation provided insight into aspects of the initial response and recovery conducted in 2001/2002. Although the OCME operation was not intended to analyze or critique the original recovery operation, but when understood within the larger site context it provided general explanations for why much of the remnant WTC material and remains were not originally removed from site.

A total of 952 potential human remains have been recovered from the excavation during sifting operations conducted in 2006 and 2007. Potential human remains were recovered from 49 (83%) of the 59 excavated units. In addition, 29 potential remains were recovered from subterranean structures located on and adjacent to the site. The three main contexts where WTC debris and human remains were found were: (1) sections of intact paved pre-9/11/2001 surfaces; (2) pre-9/11/2001 unpaved areas; and, (3) voids caused by debris impact, machine excavation and pre-9/11/2001 subterranean structures. Many of these contexts were found to be partly the results of recovery activities carried out during the 2001/2002. Photographs of the original recovery effort clearly support the excavations findings and illustrate these relationships.

Many of the archaeological contexts exposed during the excavation were not necessarily unique to the WTC disaster and could be encountered in other mass disaster situations. These insights regarding the original recovery effort including the assessments of the strategies used in the OCME operation provide a body of information that could be adapted to future situations, which could be used to improve mass disaster recovery efforts, especially where a high degree of fragmentation is involved. The OCME WTC operation demonstrates the strength and practicality of using archaeological methods as a framework for systematic mass disaster recovery operations. In addition, the operation demonstrates that archaeologists properly trained in forensic protocols are uniquely effective at carrying out the variety of tasks it takes to ensure that the scene has been accurately defined, cleared and documented. Attendees will gain an appreciation for the practical benefits of archaeological methods in such tasks as defining horizontal and vertical site boundaries using stratigraphic analysis and artifact identification, as well as some conceptual ideas regarding how pre- and post-disaster land use factor into an urban mass disaster recovery operation.

It is not suggested that a mass disaster response and recovery operation similar to the WTC disaster should, or could, be conducted solely by archaeologists, but that those leading forensic investigations and recovery operations might consider the benefit of adopting archaeological methodology, as well as including uniquely trained professional archaeologists in future mass disaster response teams. **Archaeology, World Trade Center, Mass Disaster**

 ** Presenting Author*