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I, Joyce White, PhD, declare as follows:

- As an archaeologist who has studied the archaeology of Thailand at the University of Pennsylvania (Penn) since 1974 and the site of Ban Chiang since 1976, I have specialized knowledge about the prehistoric archaeology, especially the artifacts from prehistoric cultures, of Thailand and Southeast Asia. I was guest curator for the Smithsonian-produced exhibition "Ban Chiang, Discovery of a Lost Bronze Age" that circulated nationally and internationally from 1982-1987, and I wrote the text and the catalog for the exhibition. I was awarded my PhD in 1986, and my PhD Thesis was a revision of the chronology of Ban Chiang. I have been the director of the Ban Chiang Project based at the University of Pennsylvania Museum ever since, focusing on publication of the Penn excavations undertaken in the 1970s. I am currently close to finishing (with collaborators) a monograph on the evidence for prehistoric metallurgy of Ban Chiang. In 2013 I founded and become the Executive Director of a new nonprofit entity, the Institute for Southeast Asian Archaeology, dedicated to advancing the research of this region. We recently posted a new website on the Ban Chiang Project http://iseaarchaeology.org/the-ban-chiang-project/. I have knowledge of the facts set forth herein and could and would testify to those facts fully and truthfully if called and sworn as a witness.
- 2. Beginning in August 2005, I have authenticated more than 10,000 artifacts falling within the Operation Antiquity investigation that, based on my professional knowledge, must have been removed from prehistoric archaeological sites in mainland Southeast Asia,

primarily Thailand. The two Jonathan and Carolyn Markell cases before this court are part of Operation Antiquity.

- a. Based on my long familiarity with Thailand, it long has been common knowledge, stated in most tour guides, that individuals seeking to export antiquities must have a permit from the Thai Fine Arts Department (FAD).
- b. Among the thousands of artifacts I authenticated for Operation Antiquity, I saw only one or two examples where export permission had been obtained from the Thai Fine Arts Department.
- c. This led me to believe that the remainder had been looted (excavated illegally and without professional scientific methods) from prehistoric archaeological sites primarily in Thailand and then illegally imported into the United States.
- 3. The scale of the archaeological damage was obviously devastating for Thai archaeological resources.
- a. Artifacts entering the antiquities market such as those I authenticated for Operation Antiquity tend to be fairly intact. Intact artifacts are rare in archaeological sites and tend to come from human burials.
- b. To retrieve intact artifacts from sites like Ban Chiang, large scale excavations must be undertaken. Most of the materials recovered from such sites like Ban Chiang, which are occupation/mortuary sites, are overwhelmingly fragmentary artifacts and/or materials that are not marketable, such as human bones, animal bones, evidence of food, and other materials discarded during daily life such as broken pottery.
- c. Based on quantitative comparisons of materials recovered by scientific excavations at Ban Chiang and similar sites