

SUSTAINABLE ARCHAEOLOGY: COLLECTIONS PRESERVATION & DIGITIZATION

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Archaeologists come on many varieties. Hi! I'm Rhonda, and the bulk of my own archaeological training and graduate work prepared me for a career in academic archaeology – teaching and training, conducting field-schools and researching my collections. The position I ultimately found myself in – as the Project and Operations Manager of a high-capacity archaeological storage facility and innovative digital research laboratory – had a sharp new learning curve. Today, instead of spending time with my colleagues out in the field excavating and collecting archaeological artifacts, I spend my days managing the long-term curation of those collections and enabling their accessibility and research-ability through traditional as well as new and innovative means.

The [Sustainable Archaeology facility at Western University](#) (there are two facilities that were established as a part of this project, the other is a [McMaster University](#)) was designed to hold over 54,000 boxes of artifacts at full capacity. Our partners at McMaster will house 30,000 boxes. All of the artifacts in those boxes will be added to a digital database, part of an “Informational Platform” that is being developed to showcase the spatial, temporal and object variables of each artifact in the collections, along with its associated records. A typical day at our facilities can involve accepting such a collection into our care, re-packaging a collection to meet our long-term archival standards, adding tracking capabilities to that collection, digitizing the associated records of that collection or entering the information from that collection into the digital database.



SA: Western shelving

Beyond collections management, SA: Western has built a state-of-the-art digitization lab showcasing equipment such as a micro-CT scanner, digital x-ray, white-light and red-laser 3D scanners, a digital microscope, a 3D powder-based printer for full-colour replication as well as a series of innovative VR equipment including Oculus Rift, LEAP motion, and HP Sprout. The aim of this laboratory is not simply to provide new and engaging means of presenting content, but to provide researchers, descendent communities and interested laypersons with new tools to enable a broader depth of archaeological understanding, engagement and interpretation. A typical day in the lab could include anything from graduate students utilizing the microCT scanner to interpret [clay vessel manufacture](#) or [Jesuit ring construction](#), to a researcher scanning a projectile point on one of the 3D scanners so that a scaled-up replica can be printed off on the 3D printer. We currently have a PhD candidate – Michael Carter – working on methods of [3D reconstructing Iroquoian longhouses](#). These reconstructed dwellings will be digital assets that we will incorporate into a gaming platform that will allow us to create an [immersive environment](#) that we can engage with by wearing a VR headset such as the Oculus Rift and hand motion sensors such as LEAP motion.



Lawson Site immersive environment screen capture

Today at Sustainable Archaeology: Western, we have one of our local CRM companies visiting to float soil samples in our flotation machine. Dr. Andrew Nelson, from the Anthropology Department at the University of Western Ontario, is using the microCT scanner to scan an old family heirloom – a gold coin from Peru. Two of the database team members have been working out how to capture artifact metadata, and myself and a summer student have been trying to work through some colour replication discrepancies between 3D scan capture and 3D printing. Behind all of that, though, are the day-to-day activities that keep this archaeological research facility and artifact repository running smoothly – requesting quotes for some final pieces of equipment, ensuring health and safety standards are up-to-date by running a safety check on the mobile shelving, arranging for some maintenance to the facility to

ensure that conditions in the shelving area remain stable, and answering inquiries from those interested in storing their collections at our facility in the near future. All in a day's work!