University of Central Florida
STARS

Documentation for UCF BCA Projects

4-19-2018

Brevard County Digital Documentation and Archaeology

Kylee B. Encarnacion
University of Central Florida

Find similar works at: https://stars.library.ucf.edu/ucf-bca-documentation
University of Central Florida Libraries http://library.ucf.edu

This is brought to you for free and open access by STARS. It has been accepted for inclusion in Documentation for UCF BCA Projects by an authorized administrator of STARS. For more information, please contact STARS@ucf.edu.

Recommended Citation

Encarnacion, Kylee B., "Brevard County Digital Documentation and Archaeology" (2018). *Documentation for UCF BCA Projects*. 1.
https://stars.library.ucf.edu/ucf-bca-documentation/1

Brevard County Digital Documentation and Archaeology

Kylee B. Encarnacion

Department of Anthropology
University of Central Florida
April 19, 2018

Abstract

The purpose of this paper is to act as a guide for what digital documentation management is and how it is an important resource for archaeology in Brevard County, Florida. References to a couple repository sites are made, along with the ethics behind using them for information preservation, curation, and development. The Wilson Cemetery on Cape Canaveral is examined, in this paper as a test subject for using the STARS database for archaeological recording and database creation during the Cape Canaveral Archaeological Mitigation Project, Season 2. While stating an argument for why Total Station mapping was used and providing some results of investigations, a conclusion was made for the Wilson Cemetery to be included onto the Nation Register of Historic Places. An overview of information that will be added from the Wilson Cemetery into the Showcase of Text, Archives, Research & Scholarship database by the University of Central Florida for future development, use, and research. What's next for the database includes growth and management of software and datasets, and the possibility of influencing other institutions to utilize this resource.

Introduction

While doing archaeology in Brevard County, it is a goal to have all information housed in one place that is easily accessible for future research, development, and use. Digital data management is the management of information gathered for a specific purpose on a digital medium; such as a computer, a website, or some other form of a digital hard drive. It is important to have information input into a digital repository for later development, and research purposes (Digital Antiquity 2009). When it comes to archaeological information and results, data management becomes extremely important.

Archaeology is a hands-on type of science. As a quick and basic overview, to better understand a landscape or carry out research goals, archaeologists must first do a lot of background studies of the area and about what needs to be understood about the past and those who were a part of it. Once that is complete, lots of paperwork is undertaken to get the right permits, funding, and technicians to work in the area of interest. After countless tests of the soils along transects, excavation units are dug in areas that seem most favorable according results. Once these excavation units are done, interpretations and conclusions are drawn and shared through publishing and curation. Though it may seem straight forward, a lot of paperwork is done for each form of testing, every item and special sample collected, and even down to where exactly in the world these tests being done. Narratives of how each field technician worked are also written down for better understanding of how methods were carried out and why.

As you can see, lots of information is gathered during archaeological field work. Usually, work lasts for years and the results and information that is gathered becomes extensive and hard to keep track of. The methodologies undertaken can vary extremely from the use of three dimensional scans and GPS data, to excel documents and excel spreadsheets (the Digital

Archaeological Record 2006). There may also be other archaeological sites that are worked on during seasoned projects which can make the amount of data overwhelming to keep track of, to say the least. Using digital mediums as a form of management is therefore necessary and an important part of archiving for curational purposes and usability in the future. Anything that can be documented digitally should be placed into a digital form for further research use and development. Digital documentation keeps everything in one place that is shareable and easily accessible, especially when it takes on the form of a database.

The use of a database to store information gathered at a site or during research has been done in multiple places. One well known database is the Digital Archaeological Record, or tDAR. It is an international repository for archaeological data and its initial version was founded in 2006. After various additions and removals of software, the current version was made in 2012 (tDAR 2006). The use, development, and maintenance are governed by an organization that ensures long-term preservation of archaeological data and its broad accessibility of that data. They are known as Digital Antiquity, and they give the archive the potential to transform research by the direct access of archaeological data and provide the tools to analyze and reuse it. Information input into this database can be accessed by a wide audience, thanks to the ability of the software search for keywords within a publication (Digital Antiquity 2009). Using tDAR, you can search information to teach, learn, or research more about a topic. One can even contribute to tDAR through various forms. For example, photos, documents, spreadsheets, geospatial data, and data collected by various sensors or 3D scans are some data sets that can be entered into this database (tDAR 2006). Organizations, researchers, and archaeologists can access information from thousands of archaeological sites and browse through methodologies,

samples, and artifacts collected. Each site has similar information provided that gives you an idea of what was done, why, how, and the implication or conclusion of the results.

There are the major challenges one could face when attempting to put together digital documentation for archaeological purposes. When uploaded onto the computer, datasets could have terabytes of memory required for simply one project. tDAR is the ideal database that every archaeologist would want while working on a project. According to their webpage, they "synthesize systematically collected data recorded using different coding conventions, across multiple datasets and sites (tDAR 2006)." This means that all the various forms of data from geospatial data and 3D scans can be uploaded and shared alongside word documents and spread sheets. It has the memory required, along with the searchability and accessibility needed for preservation and curational purposes. However, pricing could run high and the data provided could be limited. This could impact how the site is represented and interpreted by the viewer. Therefore, other methods of digital documentation can be utilized.

UCF Stars Database

Digital Commons is a program used to create webpages for universities and organizations and can be contacted to create project websites for that institution. Digital Commons was founded by professors in 1999 and is considered the leading hosted repository and publishing platform (STARS 2016). Universities have access to this great resource and can be used to create FREE databases to all university affiliates. At the University of Central Florida, a program was created by Digital Commons to "publicize, and share works by, from, and about UCF." This program is called the Showcase of Text, Archives, Research and Scholarship (STARS). The program is available for all affiliates of UCF and can join on their website, FREE. This program is just as searchable and is easy to use like tDAR.

Figure 1. Image above shows the proposed homepage for the Afro-American Slave Music Project with UCF STARS. Taken from Laura Capero 2013.

The Afro-American Slave Music Project: Building a Case for Digital History, used UCF STARS to create a webpage that targeted twenty first century audiences to learn more about the people and their history within a music genre (Capero 2013). Marquette University has also done

something similar with Digital Commons to create a digital database for their research. For instance, the Dr. Dolittle Project: A Framework for Classification and Understanding of Animal Vocalizations is a title of a project published on their page to showcase information related to the research (Darre, et. al. 2003). For both cases, the universities used Digital Commons for database creation to share, publish, and use information gathered during a project.

In relation to archaeology, creating a database with UCF STARS program could aid in the challenges of data collection and management. It is free of cost through a university or other institution with access to Digital Commons and has all the amounts of memory for datasets collected during projects. tDAR is a broad database and allows for multiple different uses. STARS have similar goals. You can input any type of information needed to represent a site without having to worry about the amount of memory put in to the database.

The goal is to create a database big enough to hold all archaeological data from Brevard County in connection with Tom Penders, Archaeologist and Cultural Resource Manager with the US Air Force. Individual archaeological sites worked on with the Department of Anthropology at the University of Central Florida and Tom Penders in Brevard County will soon all be housed on this website for development, research, and use with the UCF STARS program. As a test for database creation for Brevard County, the Wilson Cemetery (8BR2353) data from CCAMP will be put into a repository with UCF STARS from both the first and second season.

Archaeology and Digital Documentation of the Wilson Cemetery (8BR2353)

Introduction

The purpose of CCAMP2 is to conduct archaeological field techniques, such as soil probing and metal detection survey, thermal imaging scans, along with phase I archaeological testing and phase II excavations on the Burns (8BR85) and Hotel Site (8BR240) on Cape

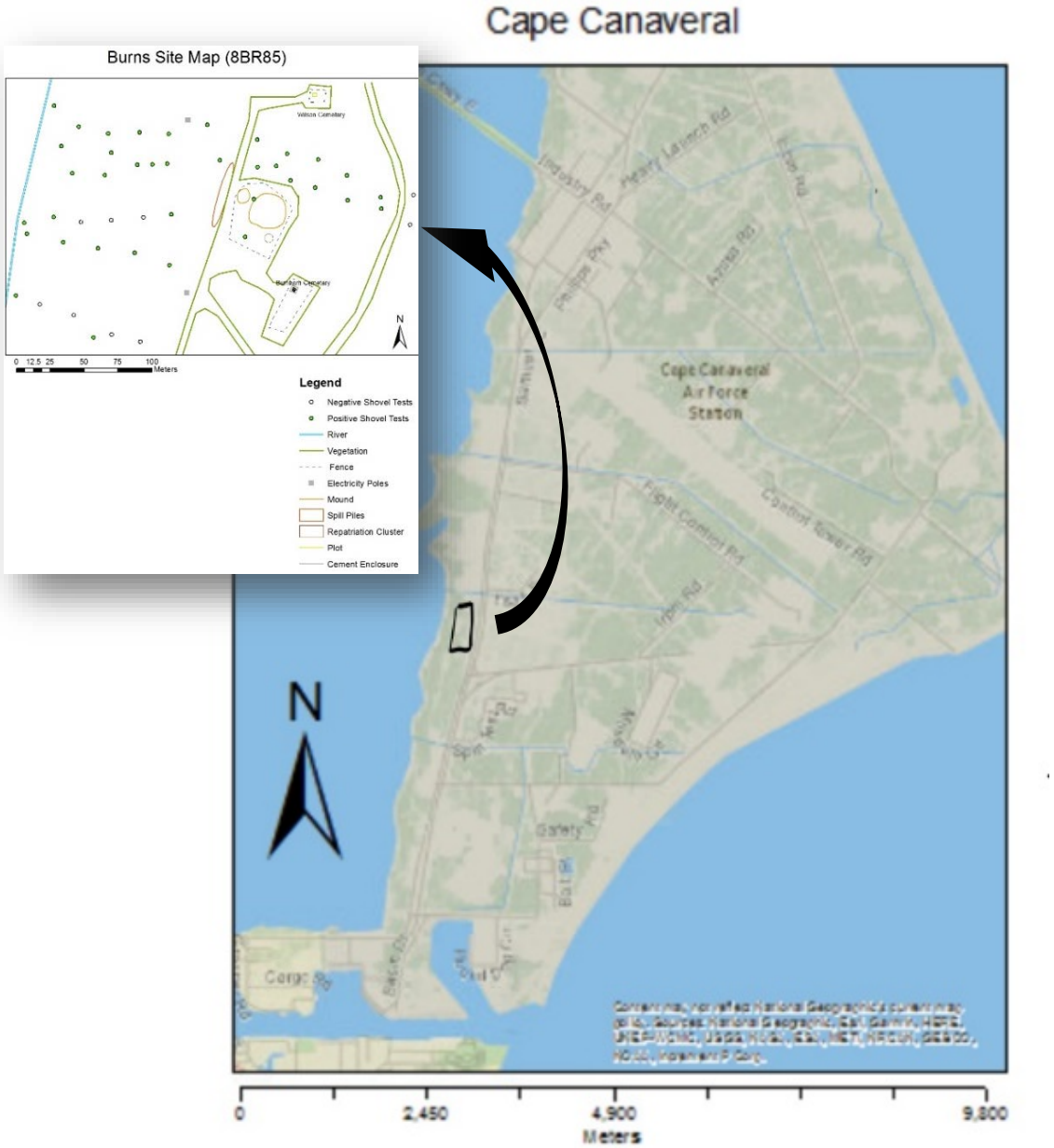


Figure 2. Above shows a map of Cape Canaveral and the Burns Site (8BR85) along with the shovel tests done one the site during CCAMP2. Created using ArcGIS.

Canaveral Air Force Station (CCAFS). The goal of the research conducted on the Wilson Cemetery was and continues to be intensive testing and excavation to document the site before it is inundated in twenty years. Also, a determination for incusion into the National Register of Historic Places (NRHP) was a major goal for the last two field seasons. The techniques that were done on the site have yielded information on the cemetery layout, composition, and history. Written documentation of any outside factors that have disturbed the site were recorded into reports and poster presentations; such as the USAF clearing of the Burns Site to be used as a missile graveyard which occurred near the Wilson Gravesite on the Precolumbian burial mound. As a part of the archaeological field techniques, a cadaver dog was used to test where there could be an unmarked, unfound grave. Rumors of such a grave could belong to Agnes Wilson, one of the daughters, who lived with Frank and his family in her childhood home until her death in 1925.

It is important to note that the Wilson Cemetery is one of three cultural resource sites on the Burns Site (Figure 2). The other sites are the Burnham Cemetery (8BR2352) and the Precolumbian Burial Mound (8BR85). All sites were analyzed during this field season and poster presentations and reports were also used to document investigative methods and results. However, for the purposes of this report, we will focus on information gathered at the Wilson Cemetery and the datasets that will be updated onto the repository with UCF STARS. In the near future all data from Burns (named after the owner of the lands) should be viewable on the webpage.

General Historical Background of the Wilson Cemetery

Figure 3. Above is an image of young Henry Wilson. (Witt 2010).

One of the First Anglo-settler and homesteader of Cape Canaveral, as well as the first lighthouse keeper in Cape Canaveral in the Mid-Twentieth century was Mills O. Burnham. The Wilson Cemetery sits on the original 160-acre plot of his homestead allotted by the Government. Frances A Wilson was Burnham's eldest daughter who married Capt. Henry Wilson of Penn Yang, NY (Figure 3). Henry was gifted with 40-acres by Burnham and this is where the two current cemeteries of the Burns Site sit; the Burnham Graves Site (8BR2352) and the Wilson Graves Site (8BR2353). Francis and Henry had eight children; their two sons Alfred B. and Frank M. Wilson reside in the Wilson Graves site.

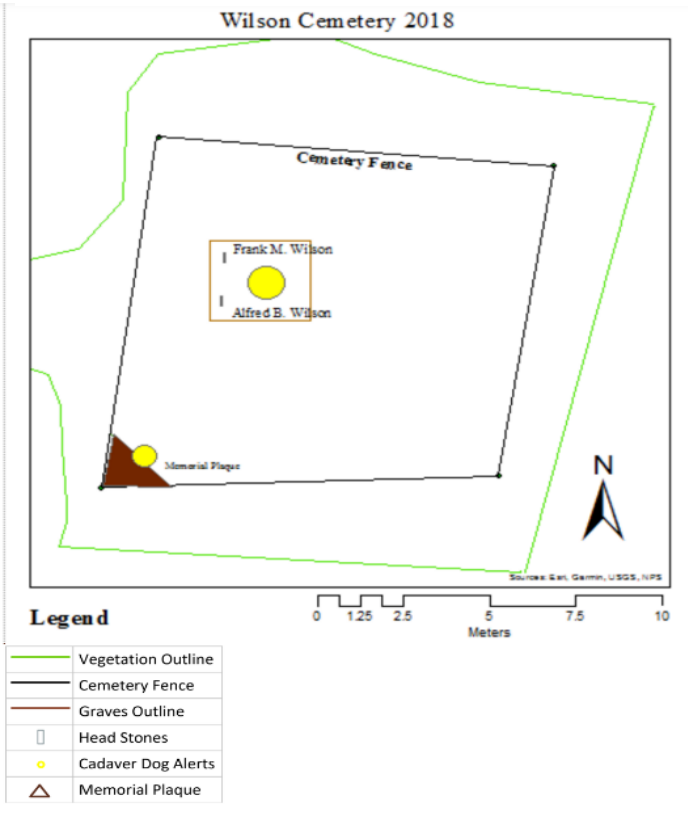
Figure 4. the Wilson family Home (right). (Wooley 1992).

Investigations and Mapping

Using a Total Station, accurate boundaries of the cemetery were mapped to cross-reference with previous data. Shovel Test Pit results and locations are currently being mapped to get an understanding of patterns for activity on the site. Information currently shows that the Burns Site extends to the north (Figure 2).

Total Station data allows for more accurate results when mapping a site. With enough connection to satellites, one would be able to map out the site in its entirety using points on a map. It is an invaluable resource for creating multiple maps such as Metal detection and Soil Probing Survey anomalies found. But seeing as the Wilson Cemetery is a small site, it was a good methodology to choose due to little changes in landscape (Figure 4).

Figure 5. Below shows a map of the Wilson Cemetery using Total Station Data and ArcGIS.



This form of digital mapping can also map elevations; however, one drawback of using this type of method is that subtle topographic features can become flattened (Panich and Schneider 2008). The use of a total station as a form of digital mapping is a good method to use based off what it can do for archaeological sites. For instance, despite its poor preservation of architectural remains, digital elevation data from a total station was analyzed to create a site plan map showing remnant architectural features of the

Mission Santa Catalina from 1797. A map was even created to record modern disturbances to this old Dominican mission from Spanish colonial control. Details were able to be added by manipulation of the software and datasets uploaded by the total station (Panich and Schneider 2009).

More work is still being completed for this field season in order to accurately map out all data from metal detection and soil probing surveys, as well as STP locations, and data for a better synapsis of site information for interpretation. However, Shovel test pit units ran from the east entrance of the Wilson Cemetery to the west gate along a single transect. Results are currently being analyzed and could aid in the decision of whether excavation will be necessary for the upcoming seasons. Also, the cadaver dog alerted on two areas of the site; the memorial plaque on the southwest corner and on the two graves within the cemetery (Figure 4). These locations could show locations to the unmarked grave, however, evidence from the Burns Cemetery show that a shrub within the fencing for the other Burnham children could be the location of the unmarked and unfound grave. Information for the cadaver dog can be skewed based off the handler's statement that the dog was getting tired.

Figure 6. Above is an image of the Wilson Cemetery with flagging for Metal Detection positives.

In conclusion to the investigations, a determination was made that the Wilson Cemetery on CCAFS is eligible for inclusion in the National Register of Historic Places based off context of the landscape and results from various tests. Further cataloging of the site will be required however, to better document the site and gather information on activity patterns. Forms for the Master Site File were also written up and posted on student research papers during this field season. And mapping of all results on the field, such as from the metal detection and soil probing surveys, and STP locations and results are being completed are recorded into final reports.

Information for STARS

In collaboration with Dr. Sarah Barber, a baseline for data preservation was done on this project. Using the STAS Program at UCF, there will be a division of categories that will be easily accessible for others to view the specifics of all research done at this site. The main project community page is called the "University of Central Florida Brevard County Archaeology." It is set up for future uploads of other archaeological sites and will soon have specific information relating to the Wilson Cemetery (8BR2353), Burnham Cemetery (8BR2352), and the Pre-

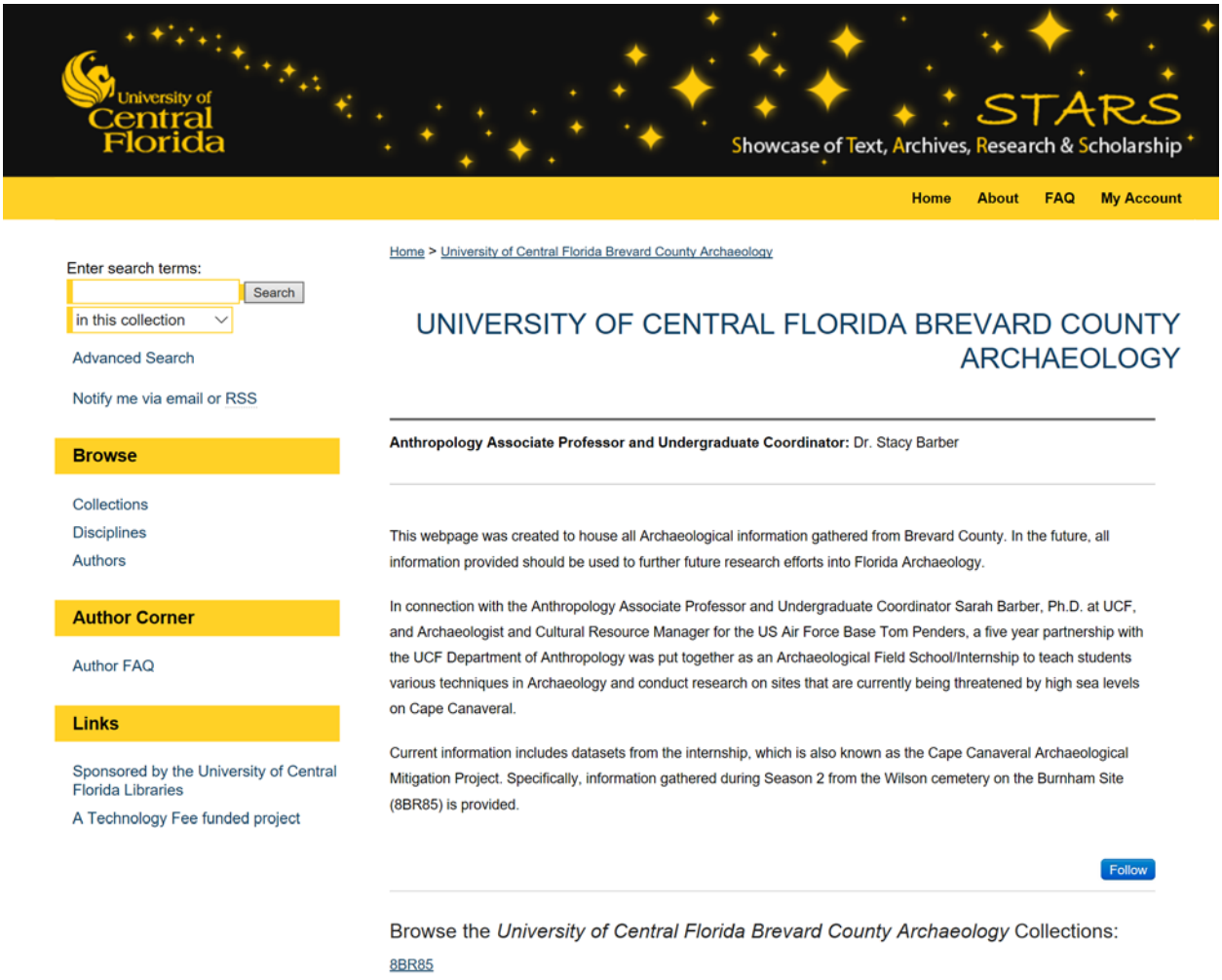


Figure 7. Above is a snapshot of the main page for the STARS repository for Brevard County Archaeology. It gives an example below of how archaeological sites will be listed. Website URL: http://stars.library.ucf.edu/ucf-bca/

Columbian Burial Mound (8BR85) located on the Burns Site. Future archaeological sites, categorized by their site number will be uploaded and shared for the same purposes. The database is currently in the works; therefore, information that should be added for proper representation of the Wilson site and its results are overviewed below.

The data that will be put into the repository for Wilson, is pretty much everything that can be digitally documented or scanned for digital documentation. Paperwork from shovel test pit units, excavation units, maps, flotation information and results, survey methodologies and their results, photos of the excavation units and shovel test pits will be posted, artifact analysis and spreadsheets, along with all methodologies in practice photos and their information and results will go onto the database. These are just some of the items that are important to keep track of and post for future analysis, research use, and development. All of the student and faculty works conducted on the Burns Site will eventually be uploaded as well in the form of poster presentations, word document reports, and images. This paper included.

All historical background information, such as previous surveys and analysis in and around the area will be added to provide context and relevance for the Wilson Cemetery as well for all of the Burns Site being added into the NRHP. It should be easily viewable and accessible to all university students and institutions who are interested in the work we have done on this site. The Wilson Cemetery information put up on the database will have search options that will make it easy for someone to find who is not using the STARS Program. The best part is that the program is free to university students, staff, and faculty from UCF and other academic based or affiliated institutions to view and use information. As was seen previously, Digital Commons can allow any university, institution, or organization the ability to create such a program, but with

UCF STARS there is a possibility to share a multitude of information and research done by UCF; especially in relation to Florida Archaeology in Brevard County.

Conclusion

For the Wilson Cemetery, more mapping is needed for visual representations of past activities. Inputting all the data collected from the Wilson Cemetery during this field season onto the database is number one priority, as it shows the reasoning behind the interpretations that this cemetery should be included in the NRHP. Based off the NRHP regulations webpage, eligibility for inclusion is stated below:

> "The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and
>
> a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
>
> b) that are associated with the lives of persons significant in our past; or
>
> c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
>
> d) that have yielded, or may be likely to yield, information important in prehistory or history" (National Register Federal Program Regulations 1966).

The Wilson Cemetery is eligible based of a, b, and c. The Burns Site as a whole is relevant for all sections. All information gathered for the Wilson Graves Site will also shed light onto data for the other two archaeological sites on Burns; the Burnham Cemetery (8BR2352) and the Precolumbian Burial Mound (8BR85). All information gathered from this field season from the Burns Site will be posted onto the "University of Central Florida Brevard County Archaeology" at a later time as well.

The Cape Canaveral Mitigation Project has a five-year contract with the Department of Anthropology at the University of Central Florida to conduct archaeological field methods and research on the Burns and Hotel Site, with Burns being top priority, this database should grow in the types of information provided, such as the University of Florida conducting 3D Scans on the Burns site in conjunction with volunteer UCF students. The repository should also create a baseline for digital data management and documentation for CCAMP and other sites in affiliation with UCF and Brevard County. Some of these archaeological sites include the Cape Canaveral Lighthouse that Burnham used to own, Fox Lake, and Sam's House (Site numbers will be added onto the database in the future).

Florida Archaeology will become more easily accessible and researched by students, faculty, and staff at UCF and other researchers a part of other organizations and/or institutions. However, like everything else, it must continue to develop as a database for the datasets it holds. Software get updated all the time and functionalities change for user friendly purposes. STARS is a relatively new Program at UCF and must have someone to learn all the ins and outs of the system. This means that future CCAMP students or those involved in the project with UCF must keep up-to-date with all the updates, as well as add to and maintain data within the repository; according to the standards of Tom Penders.

The use of the STARS database implies that archaeological research projects can utilize this program to further preserve and curate information for the future. If the database holds steady for this project and others within Brevard County, then other anthropological research done by the UCF Anthropology Department can be published using this free resource. It has the same opportunities as tDAR, which usually would be pretty expensive. Such a database also includes the possibility of recreating the lives and importance of those investigated; this is known as a 'New Heritage (Gonzalez-Tennant 2013).' The use of new media technologies with cultural heritage creates a new heritage that can be shared with others. Scientific knowledge can be logged and dated, researched and shared, analyzed and re-interpreted, and most importantly preserved.

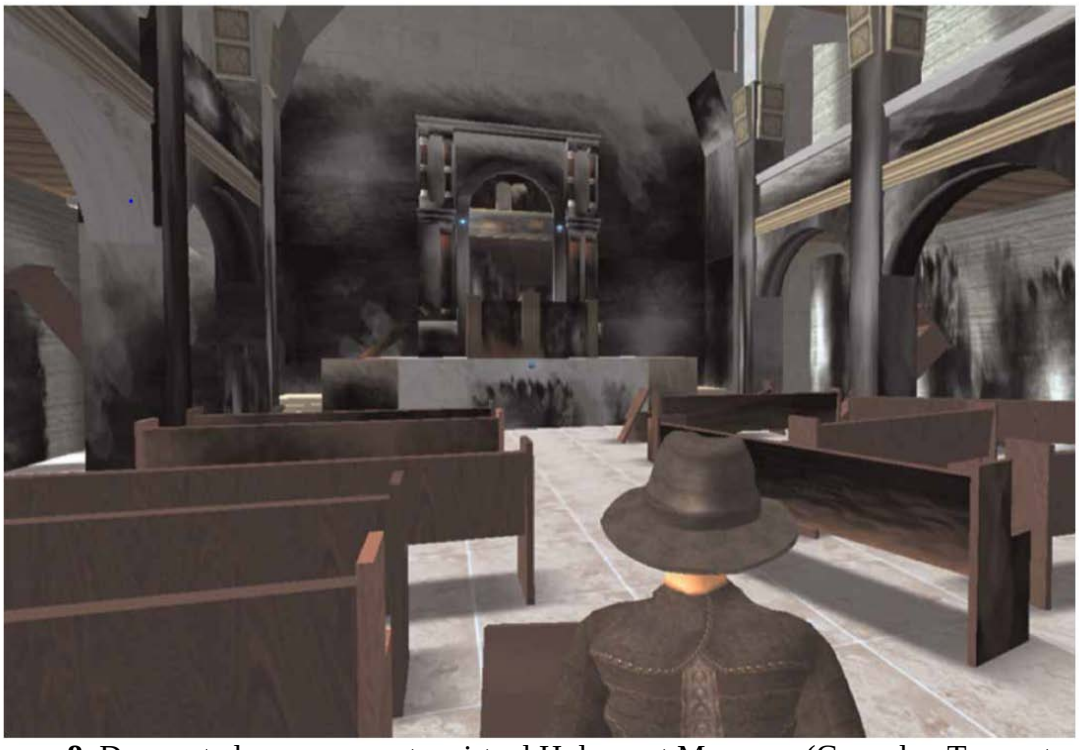


Figure 8. Desecrated synagogue at a virtual Holocaust Museum. (Gonzalez-Tennant 2013.)

Digital documentation can take on multiple forms. From the use of photogrammetry to creating full modeled virtual environments of a landscape, data can be used, shared, and published onto this repository. Whole museums have been created to showcase information about the holocaust as a digital museum that could be accessed via online. This model puts a person in the shoes of the people who lived during that time and one can feel the history speak through the computer screen, just by virtual experience (Gonzalez-Tennant 2013).

Different forms of digital presentation and representation of data to can be showcased, and mediums such as photogrammetry and virtual modeling of environments for virtual experience are quite accurate in the recreation of landscapes, features, and/or artifacts. One can even create 3D models of artifacts with the photometric data used in photogrammetry from a database, which can be used to develop awareness and knowledge about various aspects of archaeology. Therefore, the use of a digital database for archaeological studies should be used to further develop, research, and use of all data created during field seasons of any project, especially for Brevard County. Institutions should work to create repositories for archaeological research undertaken.

References Cited

Bepress Digital Commons

1999 *About.* Electronic Document, https://www.bepress.com/about/

Capero, Laura.

2013 *The Afro-American Slave Music Project: Building Case for Digital History*. Master's Thesis, University of Central Florida's STARS Database.

Darre, Michael, Michael T Johnson, Anne Savage, Peter Schiefele, and Elizabeth Von Muggenthaler.

2003 *e-Publications@Marquette*. Raynor Memorial Libraries. Marquette University. Electronic Document, https://epublications.marquette.edu/data_drdolittle/, accessed March 28, 2018.

Encarnacion, Kylee. Tom E. Penders, Sarah S. Barber.

2018 *University of Central Florida Brevard County Archaeology*. Electronic Document, http://stars.library.ucf.edu/ucf-bca/

Gonzalez-Tennant, Edward.

2013 New Heritage and Dark Tourism: A Mixed Methods Approach to Social Justice in Rosewood, Florida. *Heritage & Society* 6 (1): 62-88.

National Park Service

1966 *National Register Federal Program Regulations*. Electronic Document, https://www.nps.gov/nr/regulations.htm#604

Panich, Lee M., Tsim D. Schneider.

2008 Total Station Mapping: Practical Examples from Alta and Baja California. *Journal of California and Great Basin Anthropology* 28(2): 166-183.

Showcase of Text, Archives, Research & Scholarship

About. Electronic Document, http://stars.library.ucf.edu/about.html

The Digital Archaeological Record

2006 *About.* Electronic Document, https://www.tdar.org, accessed March 28, 2018.

Witt S.

2010 *Drawn to the light: the history of Cape Canaveral and its people.* Arkansas City, KS.: Central Plains Book.

Wooley, R.

1992 *History of Cape Canaveral and Early Settlers.* Titusville, FL