Content Creation and Virtual Exhibitions
Independent Study Project
January 2024 Interterm
(January 3rd to January 26th)

Funding for this course was provided by a grant to New College of Florida from the Andrew W. Melon Foundation.

What will you learn? You will learn about photography, photogrammetry, 3D Scanning and LiDAR. These are visualization methods that have a broad range of applications. Content created by these methods can be used in video game production, anthropological and archaeological research, documentary and film work, environmental studies, industrial applications, museum exhibitions, fabrication and modeling, creating virtual reality experiences, and a whole lot more.

What will you be doing? Doing photography and creating three dimensional images of objects, structures and cultural landscapes and spaces that can be used in a virtual exhibition space like Sketchfab and Quest Oculus. Specifically, you will be visualizing the cultural landscape of Marie Selby Botanical Gardens' Historic Spanish Point campus in Osprey (about 15 miles south of New College). You will be creating content for Marie Selby Botanical Gardens that can be used in their exhibitions. You will construct a narrative – a story – using a combination of photography, modeling through photogrammetry methods, 3D scanning of objects and LiDAR.

Background: Photography is a tool to document a moment in time and space. Though anthropology tries to unite rather than divide culture and nature but there is a long, successful tradition of nature photography. Through their images, nature photographers have proven that their content creation is an effective way to raise awareness of the beauty and fragility of the natural world, document the impact of human activities on the environment, provide valuable data for scientific research, and inspire people to become involved in conservation efforts as well as promote new relationships between people and nature.

We are living in a time of rapid landscape transformations with climate change threatening Florida's rich landscape of archaeological features. To preserve the memory of the present landscape, the use of photography, LiDAR and 3D scanning can be brought together to document and create a detailed narrative of the present-day landscape. This will help create context for future

generations to interpret and understand the Florida landscape. The use of these visualization techniques can also be used in a creative and artistic express that promotes greater access to learning and knowledge.

This ISP is going to attempt to capture these opportunities, combining archaeology and humanities together by using visualization technologies to document one aspect of the Sarasota landscape in new creative expressions that promote greater access to learning about important material culture and environmental issues.

ISP Learning Objectives:

- Engage students in a process of active learning through research using visual technologies. Students will also develop problem solving skills, especially as it relates to how to effectively use visual technologies such as photography, 3D Scanning, LiDAR and photogrammetry to create meaningful narratives about important cultural landscapes and assets to the Sarasota community.
- Involve students in an ongoing program of content creation, preservation, public education and outreach, public awareness regarding ongoing environmental concerns and climate change impacting the Sarasota cultural landscape.
- Learn technical and creative skills in using photography and visual technologies in research and public education.
- Design and create effective narratives that capture the essence of the archaeological, environmental significance of Historic Spanish Point, and that communicates the importance of the relationship and balance between humans and nature and how the botanical gardens serve as material culture that promotes community health and well-being.

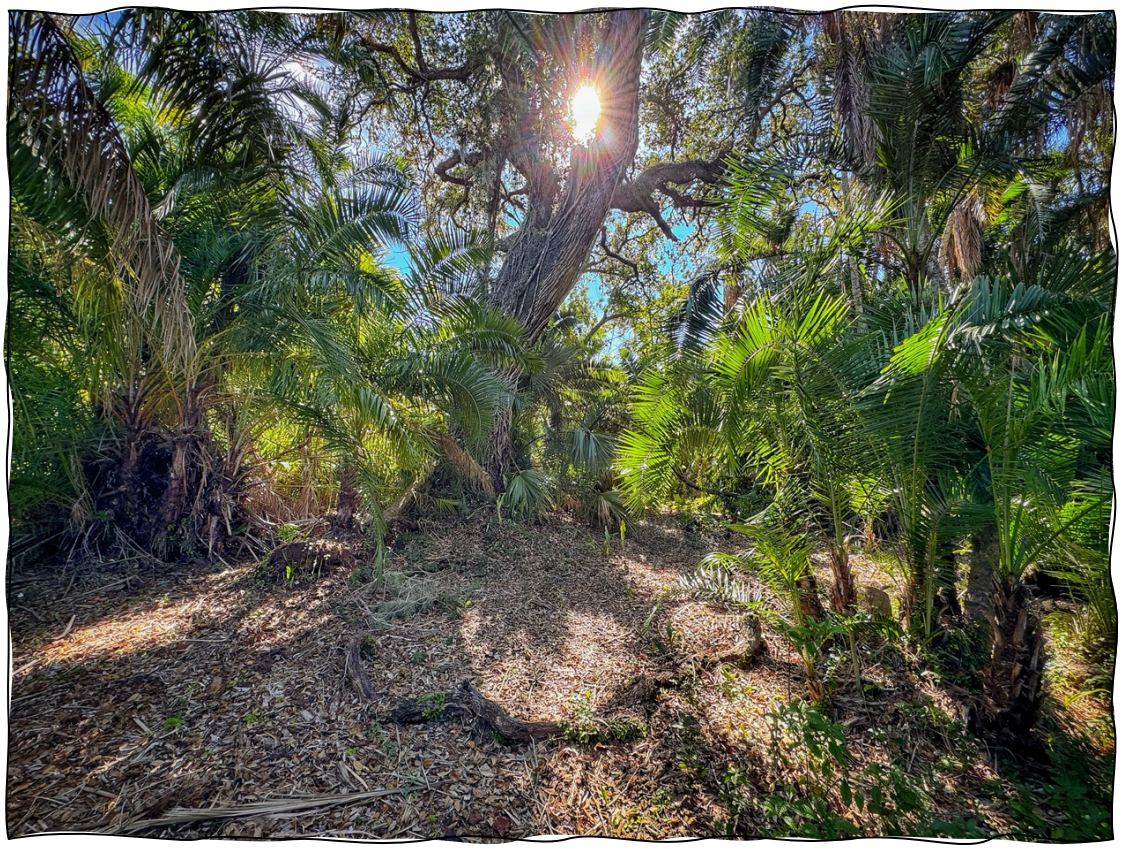
ISP Short Term Goals (the Immediate Picture):

- Create useful and substantive content using what is available technologically.
- Establish methods using the available technology that can be incorporated into a research program and/or public outreach and education.
- Learn how to transfer what is created through the ISP into a virtual experience using Sketchfab and the Quest Oculus.
- Create content that can be displayed for Florida Archaeology Month.
- Create content that can prove to be useful to Marie Selby Botanical Gardens and that demonstrates the possibilities of what can be achieved with photography, photogrammetry, 3D scanning and LiDAR.

ISP Long Term Goals (the Big Picture):

- Lay the foundation for expanding an ongoing community engagement project between New College of Florida and the New College Public Archaeology Lab with Marie Selby Botanical Gardens; and
- The creation of public content that informs, educates, and adds value to understanding the climate transformations around our communities; and

- The development of content that brings awareness of climate change that is impacting the cultural landscapes of Sarasota ; and
- The creation of content that artistically attracts public attention and promotes productive civic conversations on climate change; and
- The development and creation of visual narratives that preserve the memory of the current state of the cultural landscape at Historic Spanish Point; and
- The exploration and development of new modalities of engaging the public though incorporating digital content ; and
- The success of this group ISP will lay the foundation for ongoing research and content creation with Marie Selby Botanical Gardens, with the potential to serve as a platform to build upon the methods developed from other community projects and organizations for the benefit of the public; and
- Continual efforts stemming from this ISP will enhance future course development, potentially result in student internships, and expand research opportunities in archaeology, humanities, the arts, and museum studies; and
- Establish a foundation for a program of digital exploration, research and learning in the New College Public Archaeology Lab.



Tentative Schedule of Activities:

- **January 3rd (Wednesday)**: Group Meeting (Anthropology Lab – New College). Topic ISP Overview and Photography and Photogrammetry. 10 am to 12 pm.

- **January 4th (Thursday)**: First Tour of Historic Spanish Point (Meet at 9:15 am in order to be at Historic Spanish Point by 10 am).

- **January 5th (Friday)**: Debrief and Meeting to discuss plan of action for Historic Spanish Point. (Meet at 10 am).

- **January 8th (Monday)**: First Tour of Downtown Campus, Marie Selby Botanical Gardens. Meet at 10 am.

- **January 9th (Tuesday)**: Meet at 10 am in the Anthropology Lab. Debrief and Discuss LiDAR

- **January 10th (Wednesday)** and **January 11th (Thursday)** at Historic Spanish Point. Meet at 10:00 am. Employ methods.

- **January 12th (Friday)** Meet at 10 am in the Anthropology Lab. Evaluate content created while at Historic Spanish Point.

- **January 16th (Tuesday)** Meet at 10 am in Anthropology Lab. Review 3D scanning methods.

- **January 17th (Wednesday), January 18th (Thursday), January 19th (Friday)** Historic Spanish Point/Marie Selby Gardens. Meet at 10 am.

- **January 22nd (Monday)** Review Content Created and begin process of organizing content into a meaningful exhibition and **Determine** how to transfer content to Sketchfab and the Quest Oculus.

- **January 23rd (Tuesday)** Finalize Content

Assignments

1. Technical Journal
    - The technical journal is a space to discuss the photography/scanning process as it unfolds. You should have an entry for each day of fieldwork (encompassing photography, 3D Scanning, Photogrammetry and LiDAR). For each entry, you should write a minimum of 150 words and include at least one image and/or drawing with a caption. Make sure to cover the following details:
        - Date:
        - Address of Scan/Imaging Project:
        - Scanner (Equipment) Type:
        - Scanner (Equipment) Name:
        - Team Members/Scanner (Equipment) Operator:
        - Number of Scan Positions (Photographs) or alternative Process of Scanning:
        - Amount of Data Collected (GB):
    - Discuss the scan plan you develop with your team, and its justification. For LiDAR, you should primarily focus on the scan plan of your own scanning activities; however, you may also discuss the scan plan of the other groups where relevant
    - Environmental conditions (weather, pedestrian activity, unexpected occurrences, occlusions, etc.).
    - Describe the scan plan for the day and explain what aspects were successful or unsuccessful. Did anything require modification in the field? Provide justification for modifications to the original plan.
    - Explain the challenges you faced while scanning and how you addressed them with your team.
    - Point out any notable successes (e.g. finishing on schedule, scanning a difficult-to-reach area, executing the plan without incident, working with your team to problem-solve).
2. Final Portfolio
    - The final portfolio is a report on your image project that should be formatted and prepared as if for a professional client. Include the following sections on a document that is edited for correct grammar, spelling, punctuation, and usage. Use 1" margins, 12-point font, and double spacing. Take care to make sure that all descriptions are technically correct and that all images have informative captions.
        - Title Page
        - Title of project
        - Author
        - Date
        - ISP information
    - Introduction (100 words)
        - Location of scan project
        - Background of scan project
        - Discussion of how geomatics is transforming research on heritage, tourism, and sustainability.

    - Optional: include references to relevant scholarship (e.g. Xiao article)
- Photogrammetry/Photography (150 words)
    - Describe the scan (photographic) plan for your project area.
    - Where, why, and how the scans (photographs) were completed.
    - Include technical details, such as:
    - Make/model of scanner (camera)
    - Number of scans (photographs)
    - Amount of data collected (GB)
    - Key details of the scan (photography) plan
    - Scan profile and settings
    - Include at least two photos and/or screenshots to illustrate.
    - All images must have captions.
- Lidar (150 words)
    - Describe the scan plan for your project area.
    - Where, why, and how the scans were completed.
    - Include technical details, such as:
    - Make/model of scanner
    - Number of scans
    - Amount of data collected (GB)
    - Key details of the scan plan
    - Scan profile and settings
    - Include at least two photos and/or screenshots to illustrate
    - All images must have captions
- 3D Scanner (150 words)
    - Describe the scanning process for your project
    - Where, why, and how the scanning was completed
    - Include technical details, such as:
    - Make/model of scanner
    - Method and Process of scanning
    - Amount of data collected (GB)
    - Key details of the objects scanned
    - Scan profile and settings
    - Include at least two photos and/or screenshots to illustrate
    - All images must have captions

3. Final Deliverable for Exhibition (3D Models of Artifacts, Features, and Scans & Photographs)
    - 3D Prints
    - Sketchfab and the Quest Oculus.
    - Display Quality Photographic Prints

Background Materials & Links: (Also consult the folder on the Google Drive)

Classic Background Readings on Photography and Images:

John Berger, *Ways of Seeing* (1977)

Susan Sontag, *On Photography* (1977)

Walter Benjamin, *The Work of Art in the Age of Mechanical Reproduction* (1935)

Special Opportunity:

During ISP (and until August), Marie Selby Botanical Gardens has more than a dozen Clyde Butcher photographs on outside display across its Historic Spanish Point campus: https://selby.org/dsc/dsc-exhibitions/clyde-butcher-nature-through-the-lens/

Clyde Butcher is well-known for his extraordinary work on the Florida Everglades. The State of Florida proclaims: "Clyde Butcher is often called the Ansel Adams of Florida" Since the early 1980s when he moved to Florida from California, Butcher has built a career as one of the most highly regarded black-and-white landscape photographers in the world. Today his work in the wild areas of Florida represents one of the best environmental arguments for preserving what remains of the state's rich natural heritage." https://dos.fl.gov/cultural/programs/florida-artists-hall-of-fame/clyde-butcher/

For more on the artist, see https://clydebutcher.com/

On Native American Landscapes:

Keith Basso 1996 *Wisdom Sits in Places: Landscape and Language Among the Western Apache*

Jerald Milanich and Nina Root 2011 *Hidden Seminoles: Julian Dimock's Historic Florida Photographs*

Jerald Milanich and Nina Root 2013 *Enchantments: Julian Dimock's Photographs of Southwest Florida*

For an Overview of the Archaeology of Sarasota/Manatee, see https://archaeologysrq.org/

For the Ancestral Seminole History for Florida, see
The Ancestors https://www.semtribe.com/stof/history/the-seminole-ancestors

For the Webb Family History at Historic Spanish Point:

Janet Snyder Matthews 1983 *Edge of Wilderness* - chapters 13 Lively Times at Spanish Point and 14 Smithsonian Searches and Winter Boarders

For the significance of Bertha Palmer:

https://www.visitsarasota.com/article/bertha-palmer-woman-who-tamed-wild-sarasota

Black, Hope L. 2007 *"Mounted on a Pedestal": Bertha Honoré Palmer* Masters Thesis. University of South Florida, Tampa https://digitalcommons.usf.edu/etd/637 Chapter 10 The Sarasota Years

Key Archaeology Findings:

Ripley and Adelaide Bullen 1976 The Palmer Site. *The Florida Anthropologist* Publication 8

Laura Kozuch 1998 Faunal Remains from the Palmer Site (802), with a Focus on Shark Remains. *The Florida Anthropologist* 51(4): 177-192

Irvy R. Quitmyer 1998 Zoological Indicators of Habitat Exploitation and Seasonality from the Shell Ridge Midden, Palmer Site (802), Osprey, Florida. *The Florida Anthropologist* 51(4): 193-

Lee Newsome 1998 Archaeobotanical Research at Shell Ridge Midden, Palmer Site (802), Sarasota County, Florida. *The Florida Anthropologist* 51(4):207-222

Michael Russo 2002 *Archaic Shell Rings of the Southeast U.S. National Historic Landmarks, Historic Context*. Southeastern Archaeological Center, Tallahassee - Sections on Hill Cottage (8So2)

Various Online Resources on Photography/Archaeology:

Archaeology and photography - a pragmatology
Michael Shanks
a draft of a paper for "Reclaiming Archaeology" edited by Alfredo Ruibal, Routledge 2013.
https://web.stanford.edu/~mshanks/MichaelShanks/453.html

The View Through the Camera. Photography in Archaeology Berna Güler, 2023
DAI Istanbul, Photo Archive
https://www.dainst.blog/daistanbul_blog/2023/05/12/the-view-through-the-camera-photography=in-archacology/

Erieta Attali. "Landscapes of Archaeology" 21 Apr 2023. ArchDaily. Accessed 21 Nov 2023. https://www.archdaily.com/999739/landscapes-of-archaeology ISSN 0719-8884

Scholarly Articles on Heritage at Risk, Geoinformatics, and Digital Heritage:

Backhouse, P. N. (2018). Made from the Sands of Florida. *SAA Archaeological record*, 25.

Dawson, Tom, et al. “Coastal Heritage, Global Climate Change, Public Engagement, and Citizen Science.” *Proceedings of the National Academy of Sciences of the United States of America*, vol. 117, no. 15, 2020, pp. 8280–86, doi:10.1073/pnas.1912246117.

Hansen B., Annis, S., Vorce, S., Coates, J. & Farr, A. (2022). Virtualization technologies for sustainable tourism: Adapting the Matterport 360 platform to showcase the UN Sustainable Development Goals in Tampa Bay, Florida. *The Green Institute: Working Papers*, May 12.

Harrison, L. and Hansen, B. (2020). Using Geoinformatics to Document Heritage at Risk and Climate Change at Egmont Key. The Forum [online]. Aug. 25: Institute for the Advanced Study of Culture and the Environment. Available: https://www.usf.edu/arts-sciences/institutes/iasce/the-forum/index.aspx.

Howey, Meghan C. L. “Harnessing Remote Sensing Derived Sea-level Rise Models to Assess Cultural Heritage Vulnerability: A Case Study from the Northwest Atlantic Ocean.” *Sustainability* (Switzerland), vol. 12, no. 22, 2020, pp. 1–18, doi:10.3390/su12229429.

James, S., C. Pearson, and M. Krivor. (2006). *Historic Assessment, Remote Sensing Survey, and Diver Evaluations at Egmont Key, Hillsborough County, Florida*. Prepared for the U.S. Army Corps of Engineers, Jacksonville District. Panamerican Consultants, Inc., Memphis, Tennessee.

Maglio, C. K., J. D. Ousley, A. G. Hershorin, and M. A. Mora. (2015). Tampa harbor maintenance dredging with Egmont key beneficial reuse of high silt content material using a traditional template versus cross shore swash zone placement. In *Proceedings of the Western Dredging Association and Texas A&M University Center for Dredging Studies*, "Dredging Summit and Expo 2015." Houston, TX, 22–25 June 2015.

Miller, Sarah E., and Emily Jane Murray. “Heritage Monitoring Scouts: Engaging the Public to Monitor Sites at Risk Across Florida.” *Conservation and Management of Archaeological Sites*, vol. 20, no. 4, Routledge, 2018, pp. 234–60, doi:10.1080/13505033.2018.1516455.

National Park Service. (2107). *Foundations of Interpretation: Competencies for the 21st Century*. Published by the Interpretive Development Program, Office of Learning and Development, Steven T. Mather Training Center. Harpers Ferry, WV. Available: https://mylearning.nps.gov/wp-content/uploads/2017/09/Foundations_of_Interp_2018_508.pdf

Rick, Torben C., and Scott M. Fitzpatrick. “Archaeology and Coastal Conservation.” *Journal of Coastal Conservation*, vol. 16, no. 2, 2012, pp. 135–36, doi:10.1007/s11852-010-0121-4.

Sweet, W.V., R.E. Kopp, C.P. Weaver, J. Obeysekera, R.M. Horton, E.R. Thieler, and C. Zervas, 2017: *Global and Regional Sea-level rise Scenarios for the United States*. NOAA Technical Report NOS CO-OPS 083. NOAA/NOS Center for Operational Oceanographic Products and Services.

Economou, M. (2015). Heritage in the Digital Age. *A Companion to Heritage Studies*, 15, 215-228. DOI: https://doi.org/10.1002/9781118486634.ch15

Harrison, L. and Hansen, B. (2020). Using Geoinformatics to Document Heritage at Risk and Climate Change at Egmont Key. *The Forum* [online]. Aug. 25: Institute for the Advanced Study of Culture and the Environment. Available: https://www.usf.edu/arts-sciences/institutes/iasce/the-forum/index.aspx.

Xiao, W., Mills, J., Guidi, G., Rodríguez-Gonzálvez, P., Barsanti, S. G., and González-Aguilera, D. (2018). Geoinformatics for the conservation and promotion of cultural heritage in support of the UN Sustainable Development Goals. ISPRS *Journal of Photogrammetry and Remote Sensing,* 142, 389-406.https://www.sciencedirect.com/science/article/pii/S0924271618300017