

A golden globe sits on a brick floor. In the foreground, a circular seal is embossed into the floor, featuring a stylized 'S' shape and the text 'UNIVERSITY OF CENTRAL FLORIDA'. The scene is lit with a warm, golden light.

Bones, Stones, and Virtual Labs: Human Species in 3D and 360°

Project Team Members



Amanda Groff, PhD.
Senior Lecturer



Sarah Freidline, PhD.
Assistant Professor



Goals for the Project

- ANT 2511 – Human Species (GEP) is a lab-based course without a lab
- Create virtual, “hands-on” lab spaces for that shifts online students from passive recipients to active learners
- Increase engagement through immersive 360° lab spaces that utilize 3D models to develop skills
 - Anatomical identification; comparative analyses, measuring elements
 - Help those in non-science majors

A golden statue of a knight on a horse, with a shield featuring the letters 'UCF'. The statue is set against a solid yellow background. The knight is wearing a helmet and armor, and the horse is facing left. The shield is prominently displayed on the knight's chest.

Project Description



Project Overview

- Design and build 4 virtual labs utilizing our teaching classroom in MSB
- These virtual labs are embedded in New Quizzes which allows the student to interact with the lab while answering programmed questions, side-by-side.
- Aim: Photographs and diagrams fall flat. Anatomy is best learned in 3 dimensions; thus, we aim to increase student engagement, and thereby decrease DFW rates
- First of its kind in our Department, and could be widely used by other departments to solve space issues and accommodate increased online student enrollment



Course Breakdown

- Amanda Groff, Sarah Freidline, ANT 2511 Teaching Faculty (5 more in total)
- ANT 2511 Human Species
- Online, Mixed-mode
- GEP course and Affordability Counts (department-wide adoption of OER)
- 360° and 3D scanned models of skeletal elements and stone tools; virtual measuring tools



Project Impact

- Popular GEP: 1800 average online students per academic year
- 2021-2023 Academic Years
 - ANT 2511 (all sections) had an average DFW rate of 12.7%.
 - It is our goal, and hope, that with these labs student anxiety regarding these detailed concepts will be reduced, and as a result, increase our student retention and engagement.
 - **Our goal is to decrease our DFW rate to 7%.**
- Spring 2023:
 - On average 22.4%-30.6% of the class skipped written assignments.
 - **Our goal is to decrease this non-submission rate to 12-20%.**



Project Timeline

Accomplished:

1. All 360 images and lab scenes have been filmed for all 4 labs
2. All lab video introductions have been filmed for all 4 labs
3. 3D scanning of 56 skeletal elements and stone tools is complete
4. All 3D model-building is complete for all 4 labs
5. Lab questions have been developed Labs 1 and 2
6. Virtual Lab 1 is complete in its entirety

Next Steps:

1. Complete questions for Labs 3 and 4 by beginning of May
2. Finish rendering the virtual spaces for Labs 2, 3, and 4 by September
3. Lab 1 to be pilot tested in Fall 2024 to approximately 200-400 students
4. Labs 2, 3, 4 to be implemented in Spring 2025

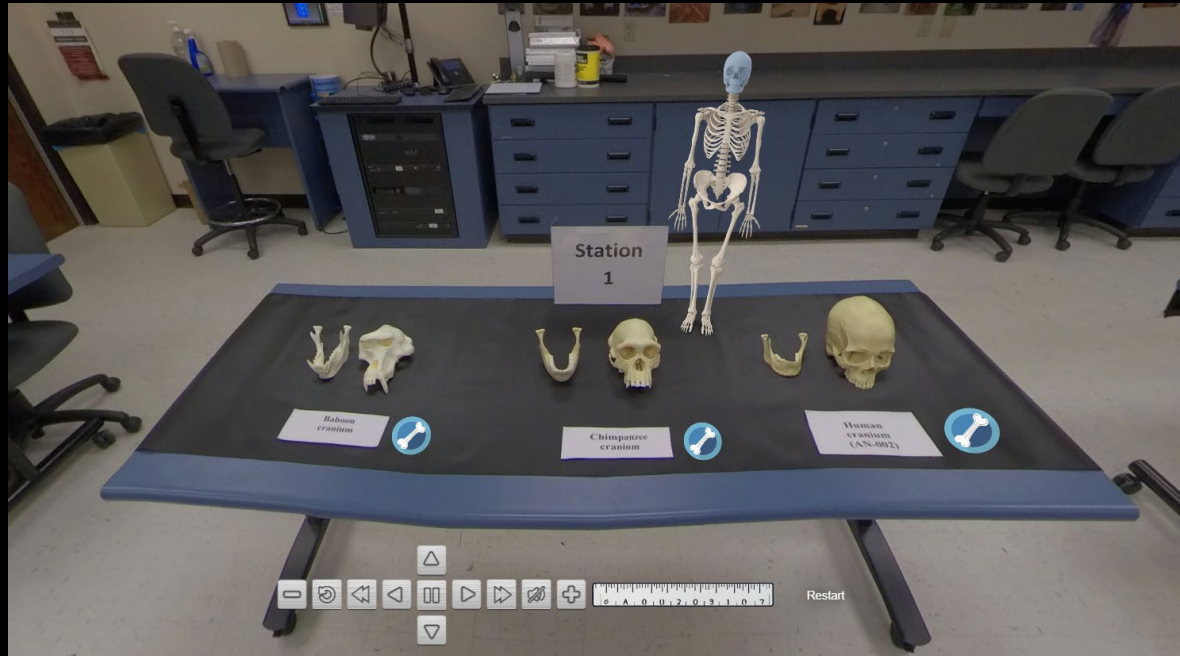
Future Directions:

1. Introduce an AI Lab assistant
2. Plan for accessibility



Supporting Details

<https://storage.net-fs.com/hosting/7543507/21/>



UCF

Project Highlights

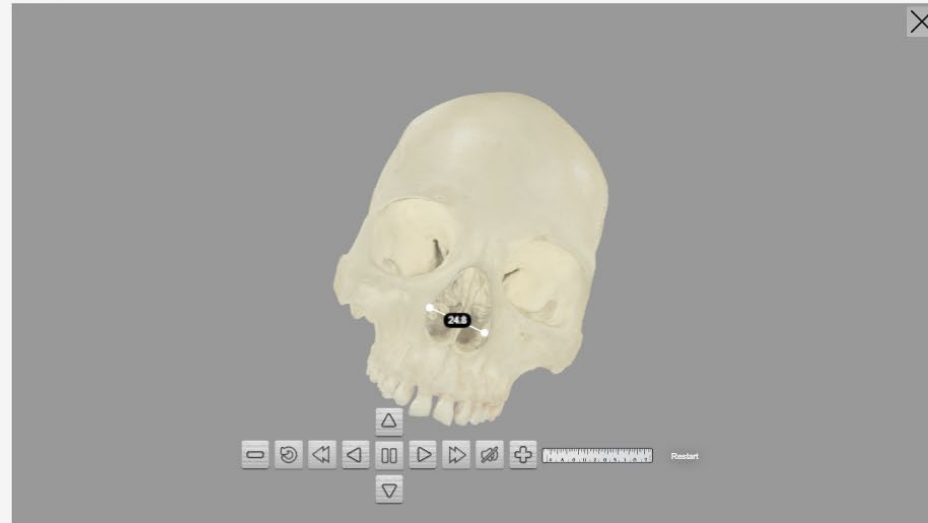


57:42
Time Remaining

Return

Submit

Virtual Lab 1



2 1 point

Measure the width of the nasal cavity (al to al) for the human cranium. Select the answer with the closest measurements in millimeters.

- 14.22mm
- 71.5mm
- 38.65mm
- 23.44mm

Previous

Submit

Project Highlights



59:15
Time Remaining

Return

Next



1 1 point

Visit Station 1. Compare the human cranium and the chimpanzee cranium. From the following choices, which is a trait they have in common?

- Dental formula.
- Incisor size.
- Canine size.
- Lateral facing eyes.

Next



Evaluation **Plans/Results**

Fall 2024:

- Implement a survey to gain student feedback
- Have a preliminary look at student participation in the Lab

Spring 2025:

- Enact suggestions and fix issues for Lab 1, utilize as part of curriculum
- Share Lab 1 with ANT 2511 colleagues
- Pilot test Labs 2, 3, 4, and implement a survey to gain student feedback.
- Review participation in all 4 labs



Thank you!



UCF