**2020 Technology Fee Concept Proposal**

**Title:** 21st Century 3D Tools to Learn and Teach Anatomy

**Proposers:** Health Science Center Libraries Digital Health Technology Team

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**Sponsoring Organization:**  George A. Smathers Libraries

**Purpose and Specific Objectives:**

The George A. Smathers Libraries requests $179,035 to purchase three-dimensional (3D) visualization and examination tools to enhance students’ learning experience in anatomy. These funds will be used to purchase Primal Pictures anatomy software and Anatomage virtual dissection table. Thousands of students in the 49 courses (<https://guides.uflib.ufl.edu/dentalresearch/3DAnatomy>) offered at UF that include an anatomy component would be able to take advantage of the 3D educational possibilities of these anatomy resources. Additionally, a new UF masters and PhD programs in Anatomical Sciences Education was implemented in 2019 through a collaboration of the College of Medicine and College of Education. Studies indicate the use of 3D anatomical visualization results in improvements in factual knowledge, spatial knowledge acquisition, and user satisfaction. [[1]](#footnote-1)

Primal Pictures (<https://primalpictures.com/primal/the_primal_story/index.html>) is a web-based 3D anatomy software. Purchase of a perpetual license will provide students in departments and colleges across the UF campus and remotely who have an interest in human anatomy with access to a powerful anatomical suite of 3D computer images, MRI scans, cadaver dissection slides, pathology specimens, and educational videos.

The Anatomage Table 6 (<https://www.youtube.com/watch?v=F9MQURbmhfs>) is a 3D virtual dissection system which includes human and animal models. This virtual dissection system is the most technologically advanced anatomy visualization system for anatomy education and has been adopted by many of the world’s leading medical schools and institutions. The Anatomage table will be housed in a public space for learning and teaching on UF campus – the Health Science Center Library— which is open Monday-Thursday from 7:30am-11:30pm, Fridays from 7:30-7pm and on weekends. The expanded access hours of the library make it an ideal location for the Anatomage table. This location will allow access by all students and faculty without the time and permission restrictions of other campus locations.

The device will be available in the Health Science Center Library’s new Biomedical Information Teaching Space (BITS). The BITS space is accessible to all students on campus, can be reserved for workshops and trainings through an online system, and is open as a study space when not reserved. The Anatomage Table can interface with Airmedia to display on four large-screen monitors in BITS to provide innovative teaching opportunities. The workstation computer connected to the Anatomage will include software to expand the use of the Anatomage programs. Features of Anatomage Table include:

* 2D radiology images (e.g. CT/MRI scans), used for clinical and educatio3D visualizations.
* Medical Design software to allow students and faculty to print custom 3D anatomical objects using the Libraries’ 3D Print Service and for the conversion of 2D images to 3D.
* Over 1,300 clinical and veterinary case studies, histology and embryo scans, and FDA-approved medical imaging software to include medical devices onto patient scans.
* Interfaces with Zoom and Camtasia which allows for screen capture and recording of short videos.

**Impact/Benefits:**

The project team anticipates students and faculty will use this technology to:

* Instruct by integrating 3D visualizations of complex anatomical structures into curricula;
* Dissect and evaluate complex anatomical structures using high-quality 3D renderings; and,
* Access thousands of annotated structures demonstrating the variation in anatomical structures in both animals and humans

**Sustainability:**

A perpetual license to purchase Primal Pictures ensures this resource will be readily available for current and future students. There are no recurring costs associated with this one-time purchase. The Health Science Center Library has committed to cover recurring maintenance costs, extended warranty agreement with an annum cost range from $8,160 to $18,360 and any infrastructure upgrades needed such as port drops/activation for the Anatomage Table.

**Timeline:**

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| **Time** | **Activities**  |
| Receipt of funds : August 2020 | * Purchase Primal Pictures and Anatomage Table
* Coordinate with Library Facilities and Library IT to identify any power or network needs
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| September 2020 | * Coordinate with Acquisitions & Collections and Library IT to add Primal Pictures into all library web-based catalogs.
* Develop marketing materials
* Coordinate with Library IT, Library Facilities, and Anatomage vendor to map out an installation schedule
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| September 2020-Febraury 2021 | * Install Anatomage Table
* Train library staff and faculty of anatomy courses across UF on use of Primal Picture and Anatomage Table
* Outreach and promotion to students, staff, and faculty
* Development of Instructional Library Workshops on using 3D anatomy resources for course integration and student learning
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1. Yammine, K. & Violato, C. (2014) A meta-analysis if the educational effectiveness of three-dimensional visualization technologies in teaching anatomy. *Anat Sci Educ.* Doi:10.1002/ase.1510
 [↑](#footnote-ref-1)