

Curatorial Methods- Intro to Natural History Museums

ANT 4930 / BOT 4935 / BSC 2930 / ZOO 4926

Spring 2018 (2-credits)

Meeting Details

Time: Thursday 1:55- 3:50pm

Location: Carr 222

Office hours: Immediately before class or by appointment

Instructor Information

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(Collection personnel)

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Course description

This course is an exploration of careers in museum-based research. Students will be introduced to alternative career paths from pre-professional fields, through observation of and immersion into the roles of collection personnel. Many undergraduate students begin their Biology careers on a pre-professional track, without knowledge of careers as a naturalist; though naturalist have the ability to inform the medical field through museum research. Additionally, most people are familiar with the public face of natural history museums, but research collections remain in the shadows, even though they can help us understand climate change, the spread of diseases, and the impacts of draining a wetland. Museum collections are like libraries, but instead of containing an abundance of books they contain an abundance of specimens. However, similar to the books, museum specimens can provide us with data, which is a vital resource for understanding today's world and their potential for making connections between the past, present, and future. The research collections housed within natural history museums also provide rich opportunities for science learning.

This course will provide students with a general overview of curatorial procedures, and training within the research collections of the Florida Museum of Natural History (FLMNH). Students will spend three class sessions touring eleven different collections. They will then spend the next seven weeks in a collection of their choice (working with collection personnel to develop and carryout a collection project). The last two classes will consist of student oral or poster presentations highlighting and sharing their experience from their collection of choice.

Learning outcomes

After completion of this course, students will be able to:

- Explain some of the uses of museum collections
- Perform curatorial procedures used in museums
- Compare and explain museum collections (wet vs dry)
- Conduct independent research using museum specimens

Grading

Your course grade will be determined based on completion of the following four assignments.

- 1) Collection reflections (1 page reflection of your experience from the collection tours). Due at the beginning of each class. (15%)
- 2) Online check in of progress in collection (7%)
- 3) Poster Presentation on your collection of choice (25%)
- 4) Paper on your collection of choice (total =53%)
 - Annotated Bibliography (7%)
 - Proposal for paper (7%)
 - Project Abstract and Outline (10%)
 - Project Introduction (10%)
 - Draft of paper (9%)
 - Final paper (10%)

Grading scale

90 – 100% = A;
80 – 89.9% = B;
70 – 79.9% C;
60 – 69.9% D;
below 60 = E

Course Prerequisites

There are no required courses. However, this course is designed for students with a background in science.

Course attendance and participation

Attendance and participation in collection explorations and activities is required and essential to achieve the learning outcomes. Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

Class etiquette

Students must arrive to class on time to be allowed admittance to the research collections. The use of cell phones and laptops is encouraged, for purposes related to the course. However, if students are caught using technology for purposes unrelated to the course, they may be asked to leave the class at the instructors (collection personnel or professor's) discretion.

Students are expected to treat each other and their instructors with respect. Use encouragement instead of criticism. Non-constructive criticism will not be tolerated.

Textbooks and Other Readings

There are no required textbooks. Various readings will be handed out during the semester or made available by email to help inform students about the collections and collection uses.

Tentative Schedule- Subject to change

Vert-Vertebrate

Paleo-Paleontology

Invert- Invertebrate

Date	Topic	Objective	Discussion/activity- Instructions	Assignment Due
Jan 11 th	Introduction to Natural History Museums	Introduce students to FLMNH Research Collections	Discuss class outline, assignments and the use and functions of museums. Field trip through Dickinson Building.	Read before class: * FM Annual Report * 2014-2019 Strategic Plan
Jan 18 th	Collection tours <ul style="list-style-type: none">• Archaeology• Vert Paleo• Botany• Ornithology	Students will get introduced to four different collections.	The 2 nd 3 classes will be designated to 3-4 twenty minute collection visits, where students will get a brief overview of the collection. Students will write a one page reflection after each collection visit.	Read before class: *Kemp2017 Lost Species **Intro and Chp 23 *Lubar2017 Lost Museum **Chp 6 Into the Storm
Jan 25 th	Collection tours <ul style="list-style-type: none">• The Soltis lab• Mammals• Invert Zoology• Invert Paleo	Students will get introduced to four different collections.	Students will explore one of the nation's largest and fastest-growing natural history museums with collection staff and their students.	Reflection of Archaeology/ Vert Paleo/Botany/ Ornithology due
Feb 1 st	Collection tours <ul style="list-style-type: none">• Herpetology• Ichthyology• Lepidoptera	Students will get introduced to three different collections.		Reflection of the Soltis lab/ Mammals Invert Zoology/ Invert Paleo due
Feb 8 th	Intermittent Reflection	Students will have the opportunity to	Students will summarize their collection experiences through an	Reflection of Herpetology/Ichthyology/

		provide feedback on collections visited Learn how to write an abstract for a scientific paper.	open class discussions of lesson learnt etc. Students will be guided through the process of writing an abstract.	Lepidoptera collection due Read before class: *Lubar2017 Lost Museum **Chp 7 Paperwork Discussion of paper. Abstract practice. Collection of choice due by 10:00am.
Feb 15 th	Collection of choice Week 1	Students get experience in their collection of choice	Intensive sessions within area of specialization	N/A Online check in due by 11:59pm.
Feb 22 nd	Collection of choice Week 2	Students get experience in their collection of choice	Intensive sessions within area of specialization	Paper Annotated Bibliography due by 11:59pm. Online check in due by 11:59pm.
Mar 1 st	Collection of choice Week 3	Students get experience in their collection of choice	Intensive sessions within area of specialization	Proposal for paper due by 11:59pm. Online check in due by 11:59pm.
Mar 8 th	NO CLASS	Spring Break		
Mar 15 th	Intermittent Reflection	Students will have the opportunity to provide feedback on collections visited Learn how to write an introduction for a scientific paper.	Students will be guided through the process of writing an introduction for a paper. Discussions on effective poster writing.	Students must sign up for ½ hour meetings with instructors to discuss their paper.
Mar 22 nd	Collection of choice Week 4	Students get experience in their collection of choice	Intensive sessions within area of specialization	Paper Outline and Abstract due by 11:59pm. Online check in due by 11:59pm.
Mar 29 th	Collection of choice Week 5	Students get experience in their collection of choice	Intensive sessions within area of specialization	Paper Introduction due by 11:59pm. Online check in due by 11:59pm.
April 5 th	Collection of choice Week 6	Students get experience in their collection of choice	Intensive sessions within area of specialization	Paper draft due by 11:59pm. Online check in due by 11:59pm.
April 12 th	Collection of choice Week 7	Students get experience in their collection of choice	Intensive sessions within area of specialization	Outline of poster due by 11:59pm. Draft of paper will be returned to students with feedback. Online check in due by 11:59pm.
April 19 th	Poster Presentation	Students get experience giving	Students will give poster presentations in a mini poster	Final Poster due for poster session in class.

		poster a presentation.	session open to the museum and UF personnel. This will provide students with a better idea of the scope of work/ experience from each individual collection. MANDATORY ATTENDANCE!	
April 26 th	Reading Day: No class			Final paper due by 11:59pm April 25th.
May 2nd	NO CLASS	Finals week		

Intensive collection details

Students will spend seven class sessions in one particular collection of their choice. Students are expected to make their decision based on their one time experience in the collection (from the collection tours) and or additional research or interest of the collections. Students will be expected to list their first three collections choices, **by midnight on February 7th**. All attempts will be made to give students their first choice.

Potential opportunities within the collections

Collection	Overview	Specific Collection Learning Outcomes
Archaeology	The South Florida and North Florida Archaeology Collections offer great opportunities to learn about Florida's history. There are 7 different Archaeology collections in addition to the two mentioned above that one can work in.	<ul style="list-style-type: none"> Learn how museum personnel study how stone tool types are refined and built upon through the years
Botany/Paleo Botany The Soltis lab	The Botany/Paleo Botany collection offers a great opportunity to learn how plant specimens are used for biomedical purposes. The Soltis lab offer great opportunity to learn about evolution of flowering plants.	<ul style="list-style-type: none"> Learn how to curate plant specimens and extract DNA Learn how we investigate the mechanisms of speciation, evolutionary relationships and character evolution in flowering and land plants at all taxonomic levels
Lepidoptera (McGuire Center for Lepidoptera and Biodiversity) Kawahara lab	The center houses Florida Museum specimens formerly stored at the Allyn Museum in Sarasota, and other collections from UF and the Florida Division of Plant Industry. With more than 10 million specimens, the McGuire Center houses one of the world's largest Lepidoptera collections, representing most of the world's 20,000 butterfly species and many of the estimated 245,000 moth species.	<ul style="list-style-type: none"> Learn how to pin butterflies and make scientific insect collection Learn how we investigate the evolution and diversity of invertebrates, especially the butterflies and moths
Invert Zoology	The Invertebrate Zoology collection is charged with their curator's objective of documenting the marine biota of coral reefs. They focus on the Indo-West Pacific (IWP), the largest and most diverse marine biogeographic region, with efforts concentrated in Oceania	<ul style="list-style-type: none"> Learn how some groups of mollusks are used in biomedical research Learn how diverse invertebrate taxa are, and how many have yet to be discovered.
Invert Paleo	The Invertebrate Paleo collection studies a wide range of invertebrates.	<ul style="list-style-type: none"> Learn how invertebrate paleontologist inform biomedical sciences

Vert Paleo	The Florida Museum's collections provide the most complete basis available for study of Cenozoic vertebrate life and evolution in the eastern United States and the circum-Caribbean Basin area.	<ul style="list-style-type: none"> • Learn how fossils are prepared • Learn the geographic time scale
Herpetology	This collection is world-wide in scope, and at > 287,000 specimens/specimen lots it is ranked #1 largest in the southeastern United States and #8 largest in North America. The Blackburn Lab focuses on understanding the diversity, evolution, and natural history of amphibians and reptiles.	<ul style="list-style-type: none"> • Learn how CT scanning of herps helps inform science • Learn how reptiles and amphibians are prepped for the collection
Ichthyology	The Florida Museum of Natural History Ichthyology Collection ranks as an international resource. The collection contains more than 211,000 catalogued lots (approximately 2,280,740 specimens), representing more than 8,000 species. In addition, there is an unsorted backlog of about 25,000 lots (about 250,000 specimens). Most of the uncatalogued and backlog material was acquired through transfer of the important collections previously housed at the National Marine Fisheries Service biological laboratories in Miami; Pascagoula, MS; and the University of Miami.	<ul style="list-style-type: none"> • Help curate and make more accessible an important collection of teaching specimens used by many university courses. • Transact specimen loans for scientific researchers, recall and reconcile past specimen loans, and learn about the many uses of fish specimens in research. • Reclassify one or more groups of fish specimens and reorder them in the UF collection.
Ornithology	This collection of 24,500 specimens, representing about 3,000 species, is approximately fifth largest in the world in number of specimens and species.	<ul style="list-style-type: none"> • Learn how to do taxidermy of birds • Learn how bird songs are used to inform science
Mammals	At the Museum the Mammal collection studies the evolutionary history of mammals. We primarily do this by examining their DNA, which carries a written record of their past. We also study the parasites of mammals, which in many cases have evolved in tandem with their mammalian hosts for millions of years. You can explore our research projects using the link on the right.	<ul style="list-style-type: none"> • Learn how mammal skins are prepared • Learn how the study of parasites in mammals helps inform biomedical sciences.

ASSIGNMENTS

Reflection of Collections- due weekly at the beginning of class (Jan 24th, 31st and Feb 7th)

Students will be expected to turn in a reflection from the collection tours (after each of the three to four collection tours), at the beginning of the next class session. Reflections should include, but are not limited to:

- What captivated students.
- Lessons learned in the collection (what surprised you?).
- Relevance to Biomedical sciences.
- Explanation of best practices in the collection.
- List of potential jobs that one could obtain using the expertise gained as a collection personnel.
- What students enjoyed most about the collection visit?
- What student did not enjoy about the collection visit?
- What students would like to do if given the opportunity to visit the collection again?
- Any other relevant points about the collection visit.

Students can choose to focus on one of the collections visited that particularly interested them (explain their interest), or discuss all 3 to 4 collections.

Paper- (multiple due dates see table below)

Within their collection of choice students will work on learning collection procedures that would allow them to formulate a research or curatorial project. Students are expected to communicate with their supervisor (this will be provided after collection assignment) in the collection to come up with their research project. The project must be undertaken within the scope of the class time (7 weeks of their collection sessions). The project must encompass some of the curatorial processes involved within the collection. It can include but is not limited to updating curatorial processes, digitizing specimens, extracting DNA for analysis for example.

Students will use knowledge gained to write a scientific paper explaining their proposed research/curatorial project. The paper should include an abstract, introduction, methods, results and discussion section.

Due dates have been established to provide feedback for the students along the process of creating their paper for this project (see below or the schedule for details).

Paper due dates

Assignment due	Date	Time	% Grade
Annotated Bibliography	Feb 21 st	11:59pm	7
Paper Proposal due	Feb 28 th	11:59pm	5
Paper Abstract and Outline	Mar 21 st	11:59pm	10
Paper Introduction due	Mar 28 th	11:59pm	10
Paper Draft due	April 4 th	11:59pm	9
Final paper due	April 25 th	11:59pm	10

Paper Project Outline

- Create a project summary
- Title the project at the top of the outline. Briefly summarize each step required to complete the project, detailing associated costs and proposing a timeline. Include a list of administrative officials associated with the project.
- Identify the major milestones of the project
- Establish the main objectives necessary to complete the project, and list them using Roman numerals. Be succinct in describing the objectives, and restrict them to a manageable amount.
- List the tasks needed to accomplish each milestone
- Below each of the major milestones, list the subtasks needed to complete each one. For example, if one of the milestones is to design a workshop or seminar, the subtasks would include researching the subject of the workshop, developing a lesson plan and creating handouts and visual aids. Alphabetize the subtasks using capital letters. For added specificity, break down the steps of each subtask using lowercase bullets, and break down these tasks until the outline is complete.

Poster Presentation

Students will also be expected to give a presentation about their experiences and lessons learned from their collection of choice. Students will create a poster to be presented in a poster session open to all museum and UF personnel. The presentations should allow students to get an understanding of the presenter's collection of choice. Posters can be printed in the Architecture lab at UF (<https://labs.at.ufl.edu/computer-labs/architecture/>).

Poster due dates NB: Students MUST be present for the presentation class on April 19th!

Assignment due	Date	Time	% Grade
Poster Outline due	April 12 th	11:59pm	5
Final Posters due	April 19 th	In class	20

Online check in of progress in collection (7%)

Students will be expected to report on their weekly progress in their collection of choice. An online forum will be created for students to report on their experiences in the collection. This report is designed to address any issues that may occur as early as possible. Please note this is designed to ensure students have a productive and enriching experience in the collections. Details on submission will be provided in class.

Due by 11:59pm after each of the 7 days in the collection.

OTHER NOTES

The second part of our class will be held at the Florida Museum of Natural History public exhibit hall on January 31st. Students will follow the schedule provided for collection tours. Students will be taken to the Powell hall (the Butterfly museum) in museum transportation and will leave Powell hall for Dickinson Hall at 3:47pm. Please let us know if this will conflict with your class schedule.