

Curatorial Methods- Intro to Natural History Museums

BOT 4935 / BSC 2930 / ZOO 4926/ ANT 3930

Spring 2018 (3-credits)

Meeting Details

Time: Tues period 7/Thurs period 7 & 8

Location: RNK106/ MCCB 2102

Office hours: Tues/ Thurs period 6 or by appointment

Instructor Information

Adania Flemming, Larry Page, Bruce MacFadden

Email: aflemming@ufl.edu / page1@ufl.edu

bmacfadd@flmnh.ufl.edu

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 museum collections personnel. Many undergraduate students begin their Biology careers on a pre-professional track, without knowledge of careers as a naturalist or museum professional. Additionally, while most people are familiar with the public face of natural history museums, research collections often remain in the shadows even though they can help us understand climate change, the spread of diseases, and the impacts of draining a wetland as well as facilitate many medical breakthroughs. Museum collections are like libraries whose books are carefully cataloged specimens that also contain a wealth of knowledge. The data these specimens provide are a vital resource for not only understanding today's world, but also for making connections to the past and the 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 four class sessions on Thursdays touring ~twelve collections. They will then spend the next eight weeks in a collection of their choice working with collection personnel to develop and carryout a specimen- based project. 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 number and justify the list of collections for collection assignment. On Tuesdays, students will have discussions about their experiences in the collections and the various components that contribute to natural history collections, as well as hear from guest speakers from related fields. The last two classes will consist of student oral and/or poster presentations highlighting and sharing their experiences during the semester.

Learning outcomes

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

- Understand the Nature of Science
- Explain some of the uses of museum collections
- Perform activities used in museums for research and curation
- Compare and explain museum collections (wet vs dry)
- Conduct independent projects using museum specimens
- Create a scientific poster and/or oral presentation
- Write a paper on a scientific topic

Grading

The course grade will be based on completion of the following assignments:

1. Collection reflections (**10%**)
 - 1 page reflection of your experience from the collection tours (8%)
 - 1 page reflection of the course (2%)
2. Journal entry discussion of progress in collection (**5%**)

Grading scale

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

3. Poster Presentation on your collection project **(25%)**
4. Reflection from lab meetings/field experience, etc. **(5%)**
5. Paper on your collection project (total = **40%**)
 - Annotated Bibliography (5%)
 - Proposal for paper (5%)
 - Project abstract and outline (10%)
 - Project introduction (5%)
 - Draft of paper (10%)
 - Final paper (5%)
6. Participation **(15%)**

Prerequisites

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

Course attendance and participation

Attendance and participation in collection explorations and activities are required and essential to achieve the course 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 instructor's (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. Be ready to discuss readings in class.

Tentative Schedule- Subject to change

Vert-Vertebrate

Paleo-Paleontology

Invert- Invertebrate

Date	Topic	Objective	Discussion/activity- Instructions	Assignment Due
Tues Jan 8 th	Introduction to Natural History Museums	Introduce students to FLMNH Research Collections and discuss the nature of the class.	Discuss class outline, assignments and the use and functions of museums. Field trip through Dickinson Hall.	
Thurs Jan 10 th	Collection tours <ul style="list-style-type: none"> • Vert Paleo • Botany • Ornithology • Paleobotany/ 	Students will be introduced to four different collections.	The 1 st - 4 th Thursday class will be designated to 2-4 twenty minute collection visits, where students will get a brief overview of the collection. Students will write a	Read before class: *Kemp, 2017, "Lost Species" **Intro

	Palynology		one page reflection after each collection visit. Students will explore one of the nation's largest and fastest-growing natural history museums with collection staff and their students.	
Tues Jan 15 th	Introduction and History of the Florida Museum of Natural History	Students will understand the history of museums and get specific information about the Florida Museum.	Doug Jones, the director of the museum will present a summary of the museum, including how it established, current status and plans moving forward.	Read before class: * FM Annual Report * 2014-2019 Strategic Plan
Thurs Jan 17 th	Collection tours <ul style="list-style-type: none"> • Molecular lab • Mammals • Invert Zoology • Invert Paleo 	Students will be 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.	Read before class: *Kemp, 2017, "Lost Species" ** Chp 23 Reflection of Paleobotany/ Vert Paleo/Botany/ Ornithology due 11:59 Wed night before class
Tues Jan 22 nd	Digitization in collections	Students will gain an understanding of digitization practices utilized within the museum.	iDiBio intro 2D images CT scanning	Read before class: *Lubar, 2017 "Lost Museum" **Chp 6 Into the Storm
Thurs Jan 24 th	Collection tours <ul style="list-style-type: none"> • Herpetology • Ichthyology • Archaeology 	Students will get introduced to three 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 the Molecular lab/ Mammals/ Invert Zoology/ Invert Paleo due 11:59 Wed night before class
Tues Jan 29 th	Broader Impacts	Students will gain an understanding of the importance and relevance of Broader Impacts as it pertains to science and museums.		Read before class: Macfadden et al. 2000
Thurs Jan 31 st	Collection tours <ul style="list-style-type: none"> • Lepidoptera • Education 	Students will get introduced to two different branches of the museum at Powell Hall in the public museum.	We will have tours of the Lepidoptera collection as well as tours of the various branches of education at the museum.	Reflection of Herpetology/Ichthyology/ Archaeology collection due 11:59 Wed night before class Collection of choice due by midnight Friday 1st February
Tues Feb 5 th	Collection projects discussion		We will review the expectations for collection projects.	Nature of Science reading Tobin Chp 8.

			(Science is messy, how do we generate scientific knowledge? Discuss the paper)	
Thurs Feb 7 th	Collection of choice Week 1	Students get experience in their collection of choice.	Intensive sessions within area of specialization.	Reflection of Lepidoptera/Education collection due 11:59 Wed night before class Journal entry due by midnight.
Tues Feb 12 th	Digitization- behind the scenes	Students will get an understanding of the processes that allow aggregation of digitized collections.	10-15 minute discussion about collection experiences. iDigBio and a look at behind the scenes digitization	Reading TBD
Thurs Feb 14 th	Collection of choice Week 2	Students get experience in their collection of choice.	Intensive sessions within area of specialization.	Journal entry due by midnight.
Tues Feb 19 th	Systematics week 1	Students will gain an understanding of systematics and the relevance of museum specimens.	10-15 minute discussion about collection experiences Seminar on systematics. What is it and what is its role in studying biodiversity?	Read before class: *Lubar2017 Lost Museum **Chp 7 Paperwork
Thurs Feb 21 st	Collection of choice Week 3	Students get experience in their collection of choice.	Intensive sessions within area of specialization.	Paper Annotated Bibliography due by 11:59pm. Journal entry due by midnight.
Tues Feb 26 th	Systematics week 2		10-15 minute discussion about collection experiences Seminar on systematics.	Read before class: *Kemp, 2017, "Lost Species" ** Chp 6
Thurs Feb 28 th	Collection of choice Week 4	Students get experience in their collection of choice.	Intensive sessions within area of specialization.	Proposal for paper due by 11:59pm. Journal entry due by midnight.
Tues Mar 5 th	NO CLASS- Spring Break			
Thurs Mar 7 th				
Tues Mar 12 th	How to write an abstract and tips for completing a paper?	Students will get an understanding of the various parts of a paper including abstract writing.	10-15 minute discussion about collection experiences Discussion of abstract writing and best practices for writing a paper.	Reading TBD
Thurs Mar 14 th	Collection of choice Week 5	Students get experience in their collection of choice.	Intensive sessions within area of specialization.	Students must sign up for ½ hour meetings with instructors to discuss their paper.

				Journal entry due by midnight.
Tues Mar 19 th	Science communication	Students will have a better understanding of science communication in museums.	10-15 minute discussion about collection experiences. Students will chat with guest about science communication in museums and their career track.	Reading TBD
Thurs Mar 21 st	BioBlitz Field Trip	We will conduct a bioblitz at NATL with several museum scientist.	Exploring biodiversity with Scientist and Educators at the LDC conference at NATL.	Paper Outline and Abstract due by 11:59pm. Journal entry due by midnight.
Tues Mar 26 th	How to do a poster?	Students will understand some of the important parts of creating a poster.	10-15 minute discussion about collection experiences. We will have example posters to tear apart to discuss the best practices in creating a poster.	Field experience reflection and one question for guest (after watching YouTube video) due by 11:59 pm
Thurs Mar 28 th	Collection of choice Week 6	Students get experience in their collection of choice.	Intensive sessions within area of specialization.	Paper Introduction due by 11:59pm. Journal entry due by midnight.
Tues Apr 2 nd	Graduate student panel	Students will have an opportunity to ask current graduate students questions about their path to graduate school and beyond.	10-15 minute discussion about collection experiences. Panel discussion with graduate students in different fields from varying backgrounds to serve as role models and provide feedback about their unique experiences.	Reading TBD
Thurs Apr 4 th	Collection of choice Week 7	Students get experience in their collection of choice.	Intensive sessions within area of specialization.	Paper draft due by 11:59pm. Journal entry due by midnight.
Tues Apr 9 th	Professional panel	Students will have an opportunity to ask museum professionals questions about their career path.	10-15 minute discussion about collection experiences Panel discussion with professionals in the museum.	Reading TBD
Thurs April 11 th	Collection of choice Week 8	Students get experience in their collection of choice.	Intensive sessions within area of specialization.	Outline of poster due by 11:59pm. Journal entry due by midnight.
Tues Apr 16 th	Poster preparation. Student meetings	Students will either meet with professors or work on their poster during this session.	10-15 minute discussion about collection experiences Poster preparation.	Reading TBD

Thurs Apr 18 th	Poster and Oral Presentation	Students get experience giving poster a presentation. There will be a handful of oral presentations during this time as well.	Students will give poster presentations in a mini poster 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!	Final Poster due for poster session in class. Draft of paper will be returned to students with feedback.
Tues Apr 23 rd	Class evaluation discussion	Students will have an opportunity to provide feedback on the class.	We will discuss the perceived impacts of the course	Reading TBD
Thurs April 25 th	Reading Day: No class			Final paper due by 11:59pm April 24th.
Thurs May 2nd	NO CLASS	Finals week		Evaluation Assignment due!

ASSIGNMENTS

1. Collection Reflections- due weekly on the Wednesday night before the next collection tour at 11:59pm (Jan 16th, 23rd, 30th and Feb 6th)

Reflections can include the following:

- What captivated students.
- Lessons learned in the collection (what surprised you?).
- Relevance to Biomedical sciences or your field of study.
- 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 2 to 4 collections.

2. Paper- (multiple due dates; see assignment table)

Students will use knowledge gained in class and additional individual research conducted on collections uses to write a paper explaining the **importance and or relevance** of their proposed project. The paper should include an abstract, introduction, methods, results and discussion section.

The main aim of this paper is to provide writing experience for students. Therefore, due dates have been established to provide feedback for the students along the process of creating their paper (see the schedule for details). Instructions can be found on the canvas for each section of the paper.

3. 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 project. Posters can be printed in the Architecture lab at UF (<https://labs.at.ufl.edu/computer-labs/architecture/>).

4. Journal- Online check-in of progress in collection

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. Students should note exactly what they did in the collection in their journal and reflective thoughts about their experiences.

Due by 11:59pm on Friday after each Thursday in the collection.

5. Participation

This class is very hands on and requires students' involvement and participation in panel discussion, literature discussions, collection tours discussions, reflection discussions as well as interaction with mentors and supervisors in the collection. Therefore participation points will be awarded for all of the above listed interactions, including presence for the class.

6. Reflection from lab meeting/field experience

Students will be required to attend a lab meeting of the collection they belong to. If this is not possible, students will be expected to interview members of their lab or participate in a field experience with their lab. Similar to collection tour reflections, students will be expected to give a one page reflection of the experience or summary of interviews.

7. Class Feedback

Students will be required to complete a one page 1.5 spaced reflection paper of the class. Feedback is essential as it will shape future offerings of this novel course. Please take time to give constructive criticism.

Due Dates

Assignment due	Date	Time
Collection Reflection	Wed Jan 16 th	11:59pm
Collection Reflection	Wed Jan 23 rd	11:59pm
Collection Reflection	Wed Jan 30 th	11:59pm
Collection of choice due by midnight	Fri Feb 1st	11:59pm
Collection Reflection	Wed Feb 6 th	11:59pm
Class Readings	Multiple see table	Before class
Journal entry	Multiple see table	Fridays at 11:59pm
Paper Annotated Bibliography	Thurs Feb 21 st	11:59pm
Paper Proposal due	Thurs Feb 28 th	11:59pm
Paper Abstract and Outline	Thurs Mar 21 st	11:59pm
Field experience reflection	Tues Mar 26 th	11:59pm
One question from Video	Thurs Mar 26 th	11:59pm
Paper Introduction due	Thurs Mar 28 th	11:59pm
Paper Draft due	Thurs April 4 th	11:59pm
Poster Outline due	Thurs April 11th	11:59pm
Final Posters due	Thurs April 18th	In class/Dickinson lobby area
Final paper due	Wed April 24th	11:59pm

Readings

ASSIGNMENT	DATE
Kemp, 2017, "Lost Species" - Intro	Thurs January 10 th
1. FM Annual Report 2. 2014-2019 Strategic Plan	Tues January 15 th
Kemp, 2017, "Lost Species" - Chp 23	Thurs January 17 th
Lubar, 2017 "Lost Museum"- Chp 6 Into the Storm	Tues January 22 nd
Macfadden et al. 2000	Tues January 29 th
Nature of Science reading-Tobin Chp 8	Tues February 5 th
Reading TBD	Tues February 12 th
Lubar2017 Lost Museum - Chp 7 Paperwork	Tues February 19 th
Kemp, 2017, "Lost Species" - Chp 6	Tues February 26 th
Reading TBD	Tues March 12 th
Reading TBD	Tues March 19 th
Watch video- create one question	Tues March 26 th
Reading TBD	Tues April 2 nd
Reading TBD	Tues April 9 th
Reading TBD	Tues April 16 th
Reading TBD	Tues Aril 23 rd

OTHER NOTES

The last tour and our field trip experience will take place at the Florida Museum of Natural History public museum (Powell Hall). **Students will be expected to meet at Powell hall (the Butterfly museum) on January 31st and March 21st.** Please let us know if this will conflict with your academic class schedule.