

# Natural History Collections Research

## A Record of the Past and a Resource for the Future

EEB 401/601 - One credit (7-week) course

Fall 2023 - Mondays from 4:10-6:10pm – September 11th to November 13th

**Natural history collections are a physical record of our planet's biology across space and time and are a critical part of modern biodiversity research. This course will introduce students to cutting-edge collections-based research. We will explore critical questions in conservation management, invasive species biology, anthropology, paleontology, ecology, evolution, scientific ethics, and advocacy that are informed by data from natural history collections.**

During this course, students will visit a variety of research and teaching collections on campus, including (but not limited to) the ichthyology, malacology, botanical, fungal, vertebrate animal, and human skeletal collections. Students will gain hands-on experience with research specimens and the metadata associated with them. We will have presentations from guest instructors (e.g., collections managers, curators, directors, and faculty) who work with natural history collections sharing their approaches to curating collections as well as their integration of specimens into their ongoing research projects.

### Primary Instructor

**Jessica Budke, Ph.D.**, Director - UTK Herbarium & Associate Prof., Ecology & Evolutionary Biology (EEB) Dept.

### Guest Instructors

**Jennifer Brummett, M.S.**, Collections Manager - Etnier Ichthyological Collection, EEB Dept.

**Mary Davis, M.Sc.**, Assistant Director - Forensic Anthropology Center & Research Associate

**Gerry Dinkins, M.S.**, Curator of Malacology - McClung Museum of Natural History & Culture

**Ben Keck, Ph.D.**, Director - Etnier Ichthyological Collection & Senior Lecturer, EEB Dept.

**Árpád Nyári, Ph.D.**, Ornithologist & Senior Lecturer, EEB Dept.

**Brigid M. Ogden, M.A., R.P.A.**, Collections Manager, Zooarchaeology Collections, Anthropology Dept.

**Margaret Oliver, M.S.**, Collections Manager, UTK Herbarium, EEB Dept.

### ***Learning Objectives - What will you get from this course?***

#### **At the end of this course you will be able to:**

- create, curate, and database natural history specimens.
- locate and mine metadata associated with biodiversity specimens.
- integrate collections into research questions in your field.
- evaluate and critique ethical questions surrounding biodiversity specimens.
- communicate the importance of collections to members of the public.
- advocate for the preservation and usefulness of collections.

**Civil Discourse** - A true university education is one in which students hear, study, and discuss ideas that challenge their thinking and encourage them to consider points of view different from their own. Students should expect to hear ideas that make them uncomfortable, should be able to explain and master concepts they disagree with, and should feel free to take opposing views as part of civil academic discourse. We remind all members of the campus community that the [Campus Free Speech Protection Act](#)—signed into state law in 2017—applies to everyone. The act endorses the fundamental responsibility of the university by defining what we are not to do: “It is not the proper role of an institution to attempt to shield individuals from free speech, including ideas and opinions they find offensive, unwise, immoral, indecent, disagreeable, conservative, liberal, traditional, radical, or wrong-headed.” These principles are recognized in the [Board of Trustees Policy Affirming Principles of Free Speech for Students and Faculty \(BT0010\)](#).

## Course Meetings

The course will meet once per week for 7 weeks, either at one of the natural history collections on campus, in Hesler Biology Building (room 304), or at another collection on campus. This is a 1 credit hour course that will meet on Mondays from 4:10-6:10pm for 7 weeks from September 11<sup>th</sup> to November 13<sup>th</sup>.

Each class meeting time students will either tour a collection, gain hands on experience with a collections-based activity, discuss a paper related to collections research, and/or listen to a presentation from and engage in discussion with an expert.

Full credit for the course will be given for each class period based on attendance, active engagement with the hands-on activities, and discussion participation. Partial credit will be given for attending class with minimal participation. **Class attendance is mandatory. You may have one class absence before attendance will impact your grade.**

\*\*\*Tentative schedule that may be subject to updates.\*\*\*

Date	Instructor	Where to meet for class	Collection Tour	Hands-on Experience	Paper Discussion	Presentation and Discussion with an Expert
Sept 4	<b>NO CLASS – Labor Day</b>					
Sept 11	Oliver & Budke	Temple Hall First Floor 1818 Andy Holt Blvd.	Plant/Fungal herbarium	Herbarium specimen preparation	The Herbarium of the Future	Plant/Fungal research
Sept 18 & 25	<b>NO CLASS – Dr. Budke Traveling</b>					
Oct 2	Keck and Brummett	515 Hesler Biology Bldg.	Etnier Ichthyological Collection	Accessioning specimens		Ichthyological research
Oct 9	<b>NO CLASS – Fall Break</b>					
Oct 16	Davis	Strong Hall 4 <sup>th</sup> Floor Lobby near elevators	Forensic Anthropology Center Human Skeletal Remains		Ethical dilemmas in skeletal collection utilization	Ethics in handling human remains
Oct 23	Nyári	D208 Walters	Ornithology teaching collection	Bird specimen preparation	Ethics in field collection	Planning an international collecting trip
Oct 30	Dinkins	McClung Museum Lobby 1327 Circle Park	McClung Museum Mussel Collections	Mussel Collections		Mussel Ecology
Nov 6	Ogden	Strong Hall 4 <sup>th</sup> Floor Lobby near elevators	Zooarchaeology Collections			Zooarchaeology Reference Collections in Archaeology and Paleontology
Nov 13	Budke	304 Hesler Biology Bldg. Or Zoom		Online collections for outreach and engagement	Collections research and big data	Collections advocacy

