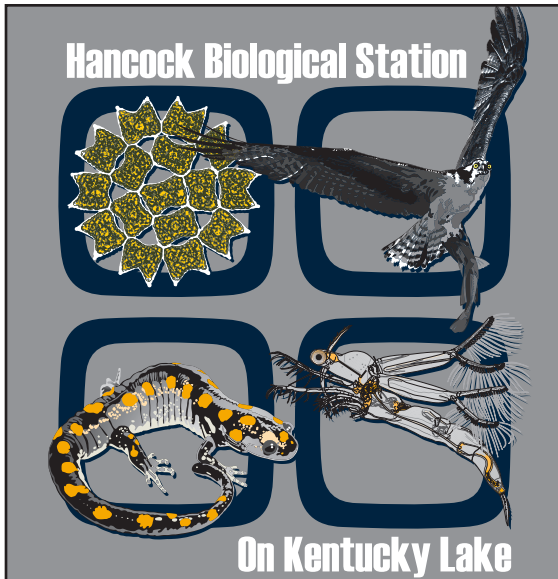


# CONFLUENCE

Summer 2020



(NEW HBS LOGO DESIGNED BY CARL WOODS)

## FOUR RIVERS WATERSHED FESTIVAL CANCELLATION

Murray State University's Watershed Studies Institute (WSI), the Jackson Purchase Foundation, and the City of Murray were saddened to cancel this spring's Four Rivers Watershed Sustainability Festival due to the COVID-19 pandemic.

However, we are looking forward to rebooting the festival as soon as we can ensure the safety of all participants; hopefully we will be able to resume the festivities in spring 2021.

Look for announcements of festival plans in future newsletters, and please continue to do your part to minimize the transmission of the virus.

## WSI ANNOUNCES STUDENT RESEARCH AWARDS

A committee of eight faculty members reviewed student research proposals during the Spring Semester and a total of 13 awards were made. Congratulations to all of our awardees and their mentors, and thank you to the faculty that did such a thorough job reviewing the proposals!

As part of their acceptance of these awards, we look forward to students' research presentations at next spring's annual WSI Watershed Research Symposium. The symposium will be held at the Murray State Curris Center during Scholar's Week if the COVID-19 pandemic subsides, or in a virtual symposium should the need arise. (continued on page 4)

## DR. ANDREA DARRACQ SHARES HER TEACHING EXPERIENCE AT HBS

Over the past three years, the faculty and staff at Hancock Biological Station (HBS) have been incredibly supportive of endeavors to provide our wildlife and conservation biology majors with hands-on field experience. I hope to express how important HBS – and the experiences we have there – is to students and myself.

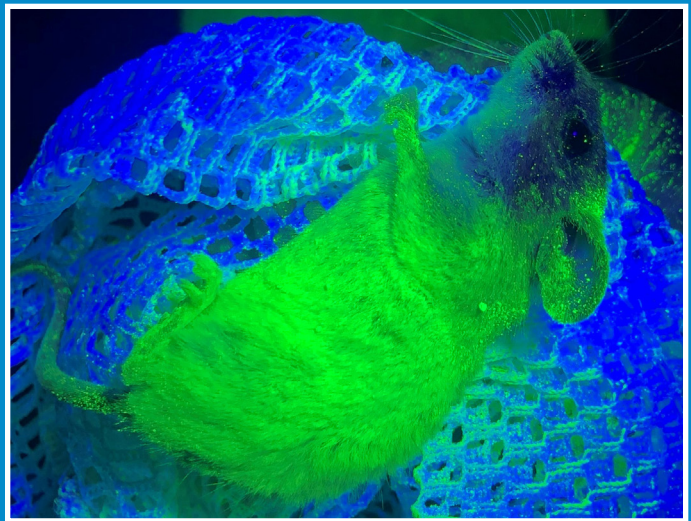
Each fall, my wildlife techniques students stay at HBS for a weekend. During this weekend trip, students learn valuable skills which include: trapping small and meso-mammals, powder tracking small mammals, vegetation measurements, orienteering, camera trapping, marking of small mammals and frogs, use of track stations, mist netting birds, owl callbacks, spotlighting, operating an unmanned aerial vehicle (UAV), and radiotelemetry.

During the 2019 Fall Semester, HBS Director Dr. Michael Flinn, Field Technician Clark Hendrix, and Operations Supervisor Jason Harris all came out to teach my students how to use a tractor and back up a trailer. Every student took advantage of this opportunity; though many were nervous, all did great!

This weekend trip involves learning from myself and individuals affiliated with the Kentucky Department of Fish and Wildlife Resource (KDFWR) and the United States Fish and Wildlife Service (USFWS), as well as MSU graduate students who are gracious enough to volunteer their time. We end Saturday evening enjoying each other's company with a meal around the campfire – wonderfully prepared by my husband Eric Darracq – and smores around the campfire.

I also hold my first wildlife techniques lab each fall at HBS where students learn how to use a compass, GPS, and pacing to determine distances. Once students understand these concepts, they complete a mast survey on HBS grounds which is one of the official KDFWR survey routes. I provide students with the starting GPS location of one tree on their route and they must locate the other nine trees they are assigned based on provided azimuths and distances. At each tree students follow the KDFWR protocol for estimating the percentage of the crown with mast.

This data is then shared with KDFWR and becomes an official part of their mast survey data. I began this mast survey with the support of HBS and the help of my husband, a KDFWR farm bill wildlife biologist, in the fall of 2018.



*A mouse powdered with fluorescent tracking powder // Photo Credit: Dr. Andrea Darracq*

My necropsy lab class at HBS is often a great success as well. KDFWR State Wildlife Veterinarian Dr. Chrissy Casey travels from Frankfort... (continued on page 3)

(Darracq continued)

...to teach my students more about necropsying wildlife to assess cause of death. Members of HBS and various KDFWR biologists are instrumental in both the setup and clean up of this particular lab. I aim to continue coordinating with HBS to provide more lab experiences at their facility.

HBS is often the first place I bring my wildlife management students. During our lab time, we walk most of the property and discuss different area types and potential management options. The faculty, staff, and facilities at HBS have been integral to the success of research completed by my graduate and undergraduate students via the field station for the research itself, helping setup infrastructure needed for research, and/or use of field vehicles.

This encompasses only a small sample of what my students and I do at HBS. I also hope to lead my first intensive summer wildlife techniques course at HBS this year and provide students with a unique opportunity to learn and gain much needed hands-on experience in wildlife techniques.

I believe I speak for both my students and myself in saying that we are grateful for the help we receive from the HBS faculty and staff, as well as the opportunity to teach course content and conduct research at our very own field station.

HAVE QUESTIONS FOR  
DR. DARRACQ?

REACH OUT AT  
ADARRACQ@MURRAYSTATE.EDU!

## IN REMEMBRANCE: DR. HAROLD EVERSMEYER

Dr. Harold Eversmeyer, 92, passed away in Nashville, Tennessee on April 3, 2020.

Having spent 31 years in the biology department at MSU, Dr. Eversmeyer was a pillar of the teaching and research community at MSU and HBS for several years. He was also a strong supporter of all things related to the study and preservation of Land Between the Lakes.

Dr. Eversmeyer also spent several years as part of the HBS Advisory Committee, helping guide the Station during its most crucial moments.

In 1984, MSU awarded Eversmeyer with the Distinguished Professor Award. Per the University website, "this student-nominated award recognizes an outstanding faculty member who has had a profound and positive influence on students, both inside and outside of the classroom."

There is no doubt that Dr. Eversmeyer provided critical guidance and knowledge to students, faculty, and staff during his tenure at MSU. The HBS community extends its thoughts to his family and friends during this difficult time.



(WSI Awards continued)

Below are the names of the awardees and their mentor(s) and their research titles (1 = undergraduates; 2 = graduate students):

Brianna Gibbons<sup>1</sup> (Dr. Andrea Darracq): Assessing the Influence of Snake Fungal Disease on the Bactericidal Ability of Timber Rattlesnakes (*Crotalus horridus*)

Carson Madigan<sup>1</sup> (Dr. Jessica Moon): Assessing Watershed Health: Mammal Use by Forest Type in a Secondary-growth Hardwood Watershed with Intense Deer Browsing, Northeastern Pennsylvania

Cassidy Hill<sup>2</sup> (Dr. Maeve McCarthy): Optimal Control of a Malaria Model

Dan Schoenberg<sup>2</sup> (Dr. Laura Sullivan-Beckers): Female quiescence in the wolf spider *Rabidosa rabida* (Family: Lycosidae)

Emily Hoard<sup>2</sup> (Dr. Howard Whiteman): Can Graph Theoretic Techniques Accurately Predict Changes in Food Webs?

Emma Campbell<sup>1</sup> (Dr. Andrea Darracq): Assessing the Influence of Parasitism and Snake Fungal Disease on Wild Cottonmouth Health

John Hewlett<sup>2</sup> (Dr. Andrea Darracq): Assessing the Influence of Stress and Behavior on Susceptibility

to and Recovery from Snake Fungal Disease in the Timber Rattlesnake (*Crotalus horridus*)

Karissa Coffield<sup>2</sup> (Drs. Kelsey Reider and Howard Whiteman): Color Variation in Tiger Salamanders: Effects of Elevation, Size, and Age.

Kevin Takashita-Bynum<sup>2</sup> (Dr. Gary Stinchcomb): Exploring the Middle-to-Late Pleistocene Paleopedology of Gona, Ethiopia: Three Multi-proxy Soil-based Studies to Further our Knowledge of Early Human-Environment Interactions

Kyler Rogers<sup>2</sup> (Dr. Oliver Beckers): The Parasitoid-host Interaction Between *Ormia lineifrons* and *Neoconocephalus spec.*

Megan Zerger<sup>1</sup> (Drs. Kelsey Reider and Howard Whiteman): Plasma Corticosterone Sampling in Arizona tiger salamanders (*Ambystoma mavortium nebulosum*)

Morgan Franklin<sup>2</sup> (Dr. Michael Flinn): *Dreissena polymorpha*, Zebra mussels, Population Distribution and Habitat Patterns in the TVA Watershed

Nolan Whitt<sup>1</sup> (Dr. Jessica Moon): Assessing Watershed Health: Soil Carbon Dynamics by Forest Type and Deer Browsing Intensity in a Secondary-growth Hardwood Watershed, Northeastern Pennsylvania.



*Salamander specimen found during Megan Zerger's research / Photo Credit: Megan Zerger*



*Kevin Bynum pictured with research hosts in Gona*

## HBS TRAIL REVIVED VIA STUDENT EFFORTS

Though many may not know it, HBS has an extensive trail that winds through much of the woodland and along the lake on the facility property.

Once a local Eagle Scout project, the trail has fallen into disuse over the past several years. Rotted woodwork, overgrown greenery, and faded signage left much of it untraversable.

The COVID-19 pandemic and subsequent quarantine presented several students with the chance to give back by completing much-needed renovations along the trail. Social distancing guidelines are much easier to adhere to during outdoor activities and these particular students – undergraduates Marie White, Colton Sanders, and Gage Barnes and graduate student Kevin Bynum – took full advantage of the time outside the classroom.

White and Sanders extended the existing trailhead by the base of the stairs near the HBS dock to continue up through the manufactured wetland area, out to the point, then behind the resource building to end by the Audubon cabin. A trail loop around the HBS property pond was added as well.

Barnes assisted White and Sand-

ers with crafting new bridges and laying out new gravel. Along with new bridges, a boardwalk was added through the bottomlands in the bay.

Bynum assisted the group with crafting new trail markers that are fashioned in MSU blue and gold and feature creatures one might see in the area. A map detailing the entire length of the trail was also added by the HBS docks to help trail walkers find their bearings.

HBS thrives thanks to the dedicated work of its students, faculty, and staff. The newly renovated HBS trail is just one example of the devotion our resident students have towards the upkeep and image of the Station.



*Undergrads Marie White and Colton Sanders posing by the new HBS trail map by the Station docks*

DONATIONS TO HBS AND WSI SUPPORT STUDENT RESEARCH AND BUILDING PROJECTS AS WELL AS FACILITATE OUR MISSION OF RESEARCH, EDUCATION, AND OUTREACH!

CONTACT [JANDERSON49@MURRAYSTATE.EDU](mailto:JANDERSON49@MURRAYSTATE.EDU) FOR MORE INFORMATION ABOUT DONATING!

# PHOTO HIGHLIGHTS



@HancockBiologicalStation



Hancock Biological Station  
Watershed Studies Institute

Follow us on  
social media to keep  
tabs on the hard work  
put in by our  
faculty, students, and  
staff!



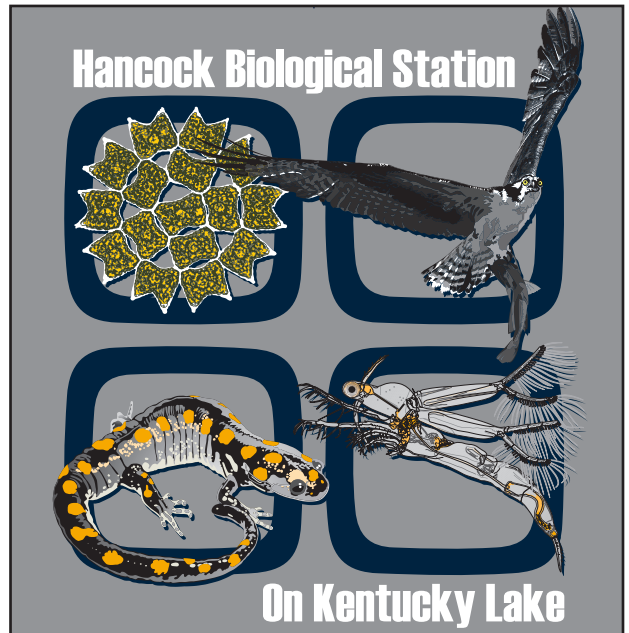
*Turtle found on HBS property during the summer prairie clearing / Photo Credit: Gage Barnes*



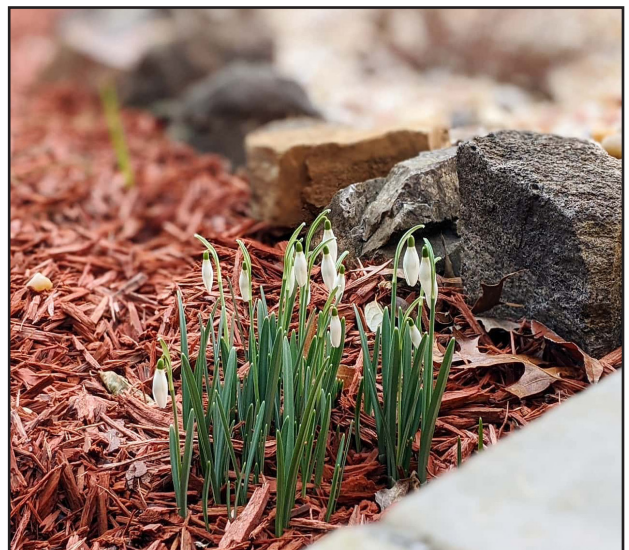
*Fresh coat of paint on HBS lettering during spring cleaning / Photo Credit: Tyler Anderson*



*Undergraduate Marie White and Graduate Student Kevin Bynum during their research trip to Gona / Photo Credit: Unknown*



*Newest HBS Logo created by Carl Woods / Photo Credit: Carl Woods*



*Spring sprung early for some flowering plants / Photo Credit: Tyler Anderson*