

MAKAYLA DEAN

CURRICULUM VITAE

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EDUCATION

University of Kentucky Bachelor of Science in Biology
Lexington, KY **Minor in Creative Writing**
2018 Cum Laude, Biology Departmental Honors

PROFESSIONAL EXPERIENCE

EM Duncan Lab
Lexington, KY
Jan 2019 - Present

Laboratory Technician

- Maintained healthy static culture of freshwater flatworms (*Schmidtea mediterranea* and *Girardia guanajuatensis*) via weekly feedings and daily water quality checks.
- Constructed and maintained a 110 gallon automatic water mixing tank and a 130 gallon high biomass recirculating aquarium system to house *S. mediterranea*.
- Designed, constructed, and maintained an aquarium system for *G. guanajuatensis* to cater to the species' unique husbandry needs.
- Created Standard Operating Procedures for maintenance of aquarium systems to control quality of worm care across lab members.
- Tracked population growth and lab use of both species and expanded colony numbers via induced regeneration when lab use exceeded population growth.
- Maintained accurate records of lab finances, inventory, and purchasing activity. Created quarterly account reports for Principal Investigator.
- Performed daily maintenance and calibration of lab equipment. Sanitized lab equipment and work surfaces weekly.
- Organized biweekly lab meetings and lab presentations.
- Trained 2 graduate students on lab safety, procedures, and equipment use. Trained and managed 5 undergraduate researchers.

**Center for Academic
and Tutorial Services**
Lexington, KY
Jan 2017 - Dec 2018

Peer Tutor

- Tutored student athletes in Animal Physiology, Ecology, English, Evolution, French, Genetics, Organic Chemistry, and Writing and Rhetoric.
- Created individualized study plans and study guides for each student.
- Prepared tutor reports after each tutoring session for Peer Tutor Director.
- Maintained confidentiality of student athletes' academic and athletic records.

**Headley-Whitney
Museum of Art**
Lexington, KY
Aug 2016 - Dec 2018

Tour Guide, Exhibition Assistant

- Guided visitors on tours of the museum's historic ground and out buildings.
- Collaborated with Curator and Head of Education to design seasonal exhibits and shows.
- Installed *Convergence*, a jewelry exhibit examining the intersection of art and nature within personal adornment.
- Maintained and conserved permanent collection of bibelots, precious minerals and gems, original art work, and miniature diorama displays.

Lewis Honors College
Lexington, KY
Aug 2016 - May 2017

Junior Peer Mentor

- Assisted Interim Dean, Residence Life, and Living Learning Program (LLP) staff with planning and execution of community-building events for LLP students.
- Held weekly office hours to connect with residents and monitor their wellbeing and academic success.
- Met individually with residents to discuss their goals for the future and to construct four-year course plans to reach those goals.

RESEARCH AND FIELD EXPERIENCE

**Krupa Mammal and
Museology Lab**
Lexington, KY
Jan 2018 - Dec 2018

Undergraduate Assistant Collections Manager

- Trapped small rodents and mesocarnivores to estimate biodiversity across Kentucky using Sherman, Tomahawk, and pit fall traps.
- Researched the ecology and geology of seven unique study sites using US Forest Service Maps and GPS data to determine the most efficient trapping method for each site.
- Prepared study skins of birds and mammals, including collection, skinning, mounting, and drying of skins. Aided in creation of pinned feet, spread wing, and spread tail displays.
- Prepared raw specimens for skeletal articulation, including skinning, fleshing, beetling, and bone cleaning.
- Performed weekly spot checks on mammal and bird study skin collections (circa 2000 specimens) to assess insect presence. Used insecticide and specimen freezer as needed to remove insects.
- Rehoused reptile collection (circa 1000 specimens) to new museum cabinets and jars, ensuring data tags matched the catalogue. Aided in converting formalin specimens to alcoholic specimens.

Jeremy Van Cleve Lab
Lexington, KY
Jan 2018 - Dec 2018

Undergraduate Research Assistant

- Investigated the effect of limb autotomy on burrowing behaviors in crayfish (*Procambarus clarkii*) under direction of PhD student Luc Dunoyer. Used remote cameras to record nightly activity of crayfish before and after forced limb autotomy.
- Measured and scored burrowing ability and efficiency of autotomized crayfish by assessing the size, depth, and exterior features of burrows.
- Assessed the behavioral response of crayfish to chemical interspecific predator cues before and after limb autotomy.
- Screened, processed, and analyzed large video dataset (~8,000 hours).
- Collected and identified crayfish species in the West Hickman Creek for outreach activities at local elementary schools.

David Westneat Lab
Lexington, KY
Aug 2017 - Dec 2017

Undergraduate Research Assistant

- Investigated sex differences in rearing and brood care behaviors in house sparrows (*Passer domesticus*) in response to brood age and size manipulation.
- Processed and screened large video datasets (~6,800 time points from 34 experimental nesting boxes).
- Quantified parental care behaviors based on size of food items brought to nest and frequency of nest visits.

Written Thesis: *Sex differences and individual variance in House Sparrow (Passer domesticus) rearing behaviors in response to brood manipulations*

PH Crowley Lab
Lexington, KY
Aug 2017 - Dec 2017

Honors Ecology Researcher

- Performed experimental manipulation of small crayfish (*Procambarus clarkii*) groups to determine relationship between body size and time required to establish dominance hierarchies.
- Quantified the maintenance of dominance hierarchies after chelae autotomy based on time required for crayfish to stop fighting.

Written Thesis: *Crayfish fight club: The effect of chelae removal on the establishment of dominance hierarchies in Procambarus clarkii*

PRESENTATIONS

Lexington, KY September 2019	<i>University of Kentucky, EM Duncan Lab Meeting</i> Long term regeneration in RNAi worms with motility defects
Lexington, KY March 2018	<i>University of Kentucky, Senior Biology Seminar</i> A day in the life of an academic researcher
Lexington, KY November 2017	<i>University of Kentucky, Honors Ecology Thesis Showcase</i> Crayfish fight club: aggression and dominance hierarchies in crayfish
Lexington, KY March 2016	<i>University of Kentucky, Technical Writing Showcase</i> Kin selection and altruism in eusocial organisms
Lexington, KY November 2015	<i>University of Kentucky, Scholars Biology Poster Power Hour</i> Silencing your sisters: coerced altruism in eusocial insects

AWARDS AND HONORS

2015-2018	\$40,000	Kentucky Heritage Scholarship
2017	\$100	King Library Press Undergraduate Poetry Broadside Contest Winner
2017	\$5,000	Julifs Foundation Scholarship
2015	\$7,500	Edgar K. Springman Scholarship
2015	\$1,000	William Roberts Memorial Scholarship

COMMUNITY OUTREACH AND ENGAGEMENT

The Bad Button Bespoke Corsets Lexington, KY January 2019 - present	Corsets for Every Body Created and presented a body-positive booth display on modern and historic corsetry at various conventions. Convention attendees had the chance to try on various styles of corsets while learning the facts behind common corset myths. Attendees also learned the basic history of corsetry and how corsets can be implemented into modern dress to add style and support to one's everyday activities. The importance of safe use and proper corset sizing was emphasized.
Maxwell Elementary Weird Science Night Lexington, KY Oct 2018	Crayfish! In Your Backyard! Developed and conducted a table display that introduced elementary school students to crayfish species native to Fayette County. Students learned how to find, catch, observe, and release crayfish living in their own backyards. Students also learned about the red swamp crayfish, their status as invasive species, and the impact invasive species have on native wildlife.

**University of
Kentucky National
Poetry Month
Celebration**
Lexington, KY
April 2018

24 Hour Poetry Reading Session

Organized and hosted a campus-wide poetry reading session. The reading session was open to all members of the university community and readers could present their own work or the work of an author they were inspired by. Event featured dedicated areas for writing workshops and poetry analysis. Over 100 readers presented work and participated in the workshops.

**Raven Run Nature
Sanctuary**
Lexington, KY
Aug 2017 - Dec 2017

Lewis Honors College Weekend Nature Walks

Organized and led nature walks and hikes for college residents. Hikers learned trail etiquette and the importance of packing out garbage and food scraps. Hikers also learned how to identify tracks of various mammal and reptile species native to Kentucky.

VOLUNTEER WORK AND EXTRACURRICULARS

**University of
Kentucky Center for
Community
Engagement**
Lexington, KY
August 2019

FUSION Site Advisor for LexArt

- Worked with student site leader to engage volunteers in meaningful community service at local art museum.
- Coordinated volunteers to clean, patch, and repaint gallery walls, pedestals, and furniture.
- Led reflection session after service to impart the importance of community service on volunteers.

**Alpha Phi Omega
National Service
Fraternity, Alpha
Zeta Chapter**
Lexington, KY
Jan 2018 - May 2018

Personal Leadership Chair

- Worked with Vice President of Leadership to create events promoting personal growth and leadership among chapter members.
- Presented leadership opportunities and events at weekly chapter meetings to promote event attendance and chapter engagement.
- Served on the Leadership Committee to organize leadership events for the chapter and region.

STEAM Academy
Lexington, KY
Nov 2017

Poster Judge

- Graded and critiqued poster presentations about long term space travel created by students from a local high school.
- Collaborated with students' teacher to provide feedback and suggestions for poster improvement to each student.

**The Colonel Satirical
Newspaper**
Lexington, KY
Aug 2016 - Aug 2017

Editor-in-Chief

- Recruited, trained, and assigned articles to writing staff.
- Designed and formatted quarterly newspaper using InDesign.
- Recorded, edited, and published weekly satire podcast.

AFFILIATIONS

- **The Wildlife Society** - *Early Career Professional Working Group; Forestry and Wildlife Working Group; Trapping, Hunting, and Conservation Working Group*
- **American Society of Mammalogists**