



# VETERINARY STUDENT CONSERVATION RESEARCH INTERNSHIPS

## Contents

Houston Toads .....	2
Attwater’s Prairie Chickens.....	4
Elephant Endotheliotropic Herpesvirus (EEHV) .....	7

To apply after reviewing descriptions, visit <https://www.houstonzoo.org/make-memories/adults/internships/> and complete an application for the Vet Student Internship according to the timeline indicated on the webpage. You may rank your interest in up to two areas, or select only one area of interest in your application by listing the same area twice.

# Amphibian Veterinary Conservation Research Internship: Houston Toads Summer

The Houston Zoo is seeking a **Veterinary Student Intern for our Houston Toad Conservation Program**. This is an opportunity to work with one of the most endangered amphibians in the United States through a unique recovery partnership with the Zoo's herpetology department, veterinary department, field partners, and USFWS. More information about the zoo's efforts in saving the Houston toad can be found on our website at: <https://www.houstonzoo.org/explore/animals/houston-toad/>

The successful candidate will participate in the husbandry and medical care of captive Houston toads and work with zoo veterinarians and conservation biologists to design, implement, and complete a research project relating to the Houston toad recovery program.

## AGENDA

- Routine husbandry of Houston toads including feeding, cleaning, and record keeping to get baseline knowledge of husbandry and toad biology.
- Pathology, including: gross necropsy, sample collection, report writing, histopath review.
- Participate in continuing education opportunities including zoo journal club meetings, mentor topics, and possible local veterinary CE.
- Potential participation in hormone-assisted captive propagation program.
- Possible opportunities for shadowing the veterinarians on clinical zoo rounds.
- Once familiarized with program, selection of a research project of interest, design and implementation of project.
  - Potential project topics include but are not limited to pathology and disease surveillance/reporting, reproduction, or standardized health assessments of captive Houston toads.
  - Mentorship and supervision will be available; the success of the research project will be dependent primarily on the Houston Toad Veterinary Intern.
  - A motivated intern with a solid project has the potential to turn this research into a peer-reviewed publication.

## SCHEDULE

This is a full-time summer internship for the months of May-August, though exact start and finish dates are negotiable. Hours will generally be from 7:00 a.m. to 4:00 p.m., 5 days/week. Hours may vary throughout the internship depending on the nature of the research project.

## PHYSICAL EFFORT AND ENVIRONMENT

This position involves a lot of walking and lifting. Time outdoors can be expected, in all different weather conditions including heat, humidity, rain, cold, or dust. It may also

involve considerable physical exertion such as climbing, reaching, assuming awkward positions, repetitive motions, and lifting and/or moving of heavy objects (up to 60 pounds) on a regular basis.

### **COMPENSATION**

There is no compensation for this position. Cost of supplies related to research project will be covered by the Houston Zoo. The intern must provide his or her own transportation to and from the zoo as well as housing.

### **REQUIREMENTS**

- Applicants should have completed one to two years of veterinary education and have an interest in non-domestic or zoo animal medicine and conservation
- Pay a one-time application fee to offset the cost of your on-boarding and uniform if accepted into the internship program (internship fees indicated online: <https://www.houstonzoo.org/make-memories/adults/internships/>)
- A negative TB test must be provided and valid for the entire internship
- *Minimum* of 200 hours during summer months (hour breakdown per week can be discussed)
- Weekly meetings with veterinarian Dr. Maryanne Tociłowski to go over progress, trouble shoot, re-direct, etc.
- Mid-term and final evaluations
- Research project and presentation to staff with potential for publication

### **APPLICATION**

To apply, visit <https://www.houstonzoo.org/make-memories/adults/internships/> and complete an application for the Vet Student Internship. For additional information, contact Dr. Maryanne Tociłowski, Dipl. ACZM, Staff Veterinarian at the Houston Zoo: [mtocidłowski@houstonzoo.org](mailto:mtocidłowski@houstonzoo.org).

Application questions can be directed to [volunteer@houstonzoo.org](mailto:volunteer@houstonzoo.org).

# Avian Veterinary Conservation Research Internship: Attwater's Prairie Chickens Summer

The Houston Zoo is seeking a summer **Veterinary Student Intern for our Attwater's Prairie Chicken Conservation Program**. This is an opportunity to work with a unique endangered species recovery program managed by our avian and veterinary teams (more information about the survival of this species can be found here:

<http://www.houstonzoo.org/explore/animals/attwaters-prairie-chicken/>

The successful candidate will participate in the husbandry and medical care of captive Attwater's Prairie Chickens (APC) at the Houston Zoo and work with zoo veterinarians and conservation biologists to design, implement, and complete a research project relating to the APC program. The intern will tour husbandry and veterinary facilities (including NASA site), become familiarized with protocols, and participate in routine care.

## AGENDA

- Participate in routine husbandry of APC chicks including feeding, cleaning, and record keeping to get baseline knowledge of husbandry and APC biology
- Perform treatments for APC chicks with veterinary supervision
- Pathology, including gross necropsy, sample collection, report writing, and histopathology review
- Participate in continuing education opportunities including zoo journal club sessions, mentor topics, and possible local veterinary CE
- Possible opportunities for shadowing the veterinarians on clinical zoo rounds.
- Once familiarized with program, selection of a research project of interest, design and implementation of project

Topics expected to be covered (with the potential for further research) include:

- Incubation
  - Incubation workshop reading materials
  - Egg collection, handling, candling, record keeping, egg management
- Banding, measurements
- Neonatology
  - Angular limb deformities: prevention, treatment, care
  - Failure to thrive
  - Nutrition and hydration
- Fluid therapy
- Nutritional support
- Antimicrobials
  - Selection, dosage, administration
- Diagnostics: sampling, limitations
- Infectious diseases
- Parasitic disease

- Preventive medicine
- Pre-release screening
- Transport
- Release, post-release monitoring

The intern project will be developed, based on discussion with the student, within the first 10 days. It may include a prospective investigation of a current medical issue, or could be retrospective, looking at data accumulated over our history with prairie chickens. This will be a learning experience, as well as an opportunity for the student to contribute to the scientific knowledge of the species through publication of the findings. The research will be presented to zoo staff at the completion of the internship. A motivated intern with a solid project has the potential to turn this research into a peer-reviewed publication

**SAMPLE SCHEDULE** (to be refined pending intern availability):

7:00 a.m. - 4:00 p.m. M-F: AM and PM treatments with Veterinary supervision.

9:30 a.m. - 12:00 p.m.: Self-study reading materials according to list above (generally arranged in progressive order); prepare for journal club

1:00 p.m. - 2:30 p.m.: Investigate topic of interest (literature search, records review) related to research project

*Hours may vary throughout the internship depending on the nature of the research project.*

**RESEARCH TIMELINE**

First full week: Background reading on prairie chickens and challenges of husbandry and veterinary care

2<sup>nd</sup> full week: Select a topic and develop a research plan

3<sup>rd</sup> through second to last week: gather data

Last 3 weeks: analyze data, write up findings, prepare for publication

Last week: Prepare and present findings for staff (15-20 minute talk)

Last day: “house-keeping” activities prior to leaving zoo

**PHYSICAL EFFORT AND ENVIRONMENT**

This position involves a lot of walking and lifting. Time outdoors can be expected, in all different weather conditions including heat, humidity, rain, cold, or dust. It may also involve considerable physical exertion such as climbing, reaching, assuming awkward positions, repetitive motions, and lifting and/or moving of heavy objects (up to 60 pounds) on a regular basis.

**COMPENSATION**

There is no available funding at this time. The intern must provide his or her own transportation to and from the zoo as well as housing.

**REQUIREMENTS**

- Applicants should have completed one to two years of veterinary education and have an interest in non-domestic or zoo animal medicine and conservation
- Pay a one-time application fee to offset the cost of your on-boarding and uniform if accepted into the internship program (internship fees indicated online: <https://www.houstonzoo.org/make-memories/adults/internships/>)

- A negative TB test must be provided and valid for the entire internship
- *Minimum* of 200 hours during summer months (hour breakdown per week can be discussed)
- Weekly meetings with veterinarian mentor to go over progress, trouble shoot, re-direct, etc.
- Mid-term and final evaluations
- Research project and presentation to staff with potential for peer-reviewed publication

## **APPLICATION**

To apply, visit <https://www.houstonzoo.org/make-memories/adults/internships/> and complete an application for the Vet Student Internship. For additional information, contact Dr. Judilee Marrow, Veterinarian at the Houston Zoo: [jmarrow@houstonzoo.org](mailto:jmarrow@houstonzoo.org).

Application questions can be directed to [volunteer@houstonzoo.org](mailto:volunteer@houstonzoo.org).

# Veterinary Conservation Research Internship: Elephant Endotheliotropic Herpesvirus (EEHV)

## Summer

The Houston Zoo is seeking a summer **Veterinary Student Intern for our Elephant Endotheliotropic Herpesvirus** program. This is an opportunity to work on issues surrounding the most important viral disease of elephants with both the elephant husbandry and veterinary teams at the Houston Zoo, as well as EEHV researchers at Baylor College of Medicine located across the street from the Zoo in the Texas Medical Center. More information about EEHV can be found here: [eehvinfo.org](http://eehvinfo.org).

The successful candidate will participate primarily in research aspects of EEHV at the Houston Zoo and Baylor College of Medicine under the mentorship of the Zoo's veterinary team. The intern will be expected to design, implement, and complete an original research project relating to EEHV, which may be prospective or retrospective. Moreover, the intern will learn and utilize laboratory skills to assist in the completion of existing EEHV research projects. The intern will have the opportunity to participate in the husbandry aspects of the Zoo's Asian elephant herd as well.

### AGENDA

- Participate in on-going EEHV related research projects occurring at the Houston Zoo and Baylor College of Medicine, which may include projects from collaborators
- Design, implement, and complete an original prospective or retrospective EEHV research project with mentorship
  - This may include, but is not limited to learning about sample collection and processing, reading elephant CBCs, performing DNA extraction and PCR, data record keeping and analysis, peer-reviewed journal article and/or scientific poster presentation creation, presentation of project at end of internship
- Assist with husbandry for the Asian elephant herd at the Houston Zoo under the supervision of the Zoo's elephant herd manager
- Participate in continuing education opportunities including, but not limited to zoo journal club sessions, didactic lectures, and possible local veterinary CE
- Opportunities for shadowing the Zoo's veterinarians on clinical Zoo rounds and in necropsy
- Opportunities for participating in other Veterinary Conservation Research Internship programs, including in Attwater's Prairie Chickens and Houston Toads

Topics expected to be covered include:

- Introduction to research and career development
  - Essentials for scientific research and writing
  - Data and record keeping
  - Write a scientific paper
  - Giving a scientific presentation
  - Career pathways in zoo and wildlife medicine

- Career pathways in research
- EEHV
  - Basic disease pathophysiology
  - Routine diagnostic screening
  - Medical care
  - Emergency response
  - Conservation implications
  - Necropsy
  - Research priorities
- Elephant husbandry, health, and welfare
  - Behavioral husbandry
  - Routine medical care

The intern project will be developed, based on discussion with the student, within the first 10 days. It may include a prospective investigation of a current medical issue, or could be retrospective, looking at data accumulated over the zoo's history with EEHV. This will be a learning experience, as well as an opportunity for the student to contribute to the scientific knowledge of the species through publication of the findings.

The research will be presented to Zoo staff at the completion of the internship.

A motivated intern with has the potential to turn this research into a peer-reviewed publication with primary author responsibility.

### **SAMPLE SCHEDULE**

Start and end dates to be determined pending intern availability with school schedule:

7:00 am: Start of Day

7:30 am: Daily veterinary rounds meeting

8:00 am: Work on project, elephant husbandry, research work at Baylor College of Medicine, or clinical observation

12:00 – 1:00 pm: Lunch

1:00 pm: Veterinary case rounds

1:30-3:30 pm: Independent study, journal club or didactic rounds, research work, clinical observation or 4:00 pm: End of day

*This is an example schedule, hours may vary throughout the internship depending on the nature of the research project.*

### **RESEARCH TIMELINE**

First full week: Zoo orientation, background reading and research on EEHV, identification of potential research project ideas (mentors will guide this process)

2<sup>nd</sup> full week: Select a topic and develop a research plan

3<sup>rd</sup> through second to last week: gather data

Last 3 weeks: analyze data, write up findings, prepare for publication

Last week: Prepare and present findings for staff (20-30 minute talk)

Last day: "house-keeping" activities prior to leaving Zoo

### **PHYSICAL EFFORT AND ENVIRONMENT**

This position involves walking and lifting. Time outdoors can be expected, in all different weather conditions including heat, humidity, rain, cold, or dust. It may also involve considerable physical exertion such as climbing, reaching, assuming awkward positions, repetitive motions, and lifting and/or moving of heavy objects (up to 60 pounds) on a regular basis.

## **COMPENSATION**

There is no available funding at this time. The intern must provide his or her own transportation to and from the Zoo as well as housing.

## **REQUIREMENTS**

- Applicants should have completed one to two years of veterinary education and have an interest in non-domestic or zoo animal medicine, research, and conservation
- Pay a one-time application fee to offset the cost of your on-boarding and uniform if accepted into the internship program (internship fees indicated online: <https://www.houstonzoo.org/make-memories/adults/internships/>)
- Submit vet school transcripts
- A negative TB test must be provided and valid for the entire internship
- *Minimum* of 200 hours during summer months (hour breakdown per week can be discussed)
- Weekly meetings with Staff Veterinarian Dr. Christine Molter to go over progress, trouble shoot, re-direct, etc.
- Mid-term and final evaluations
- Research project and presentation to staff with potential for peer-reviewed publication

## **APPLICATION**

To apply, visit <https://www.houstonzoo.org/make-memories/adults/internships/> and complete an application for the Vet Student Internship. For additional information, contact Dr. Christine Molder, Veterinarian at the Houston Zoo: [cmolter@houstonzoo.org](mailto:cmolter@houstonzoo.org)

Application questions can be directed to [volunteer@houstonzoo.org](mailto:volunteer@houstonzoo.org).