

# Summer 2020 Internship Opportunities

## James H. Barrow Biological Field Station Northwoods Field Station



### Overview:

Summer student internships at the James H. Barrow Biological Field Station (JHBBFS) and the Northwoods Field Station provide students with a unique opportunity to work closely with staff, faculty, and professionals from partner organizations to gain valuable hands-on experience. Internships are open to Hiram College students of any major to gain invaluable experience in eco-management and land stewardship, environmental education and outreach, field-based scientific research, wildlife rehabilitation, animal care and husbandry, and caretaker apprenticeships. Although students apply for a particular internship, all JHBBFS students are expected to contribute to the general needs of the Field Station, including but not limited to food production (*i.e.*, gardening, aquaponics, hydroponics) land stewardship (*i.e.*, trail maintenance, invasive species removal, prairie plantings), general maintenance (*i.e.*, cleaning, painting, garbage removal) and construction, preparation for special events, and participation in Alumni Weekend events. Some internships require weekend work.

The JHBBFS is one of Ohio's premier biological field stations and is located less than three miles from the Hiram College campus. In addition to opportunities for employment, this facility provides a variety of opportunities for recreational activities such as hiking, wildlife viewing, trail running, and picnicking. The Northwoods Field Station is located in the Upper Peninsula of Michigan surrounded by the Hiawatha National Forest and is just 20 minutes away from Lake Superior. This facility offers six sleeping cabins, a large lodge, and spectacular views and access to Cherry Lake. More information about Hiram College's Field Stations can be found at:

<https://www.hiram.edu/academics/support-services/field-station/>

### Eligibility:

- Currently enrolled as a Hiram College student.
- Continued enrollment at Hiram College through the 2020-2021 academic year.
- GPA of 3.0 or higher. Students with a GPA below 3.0 must provide a written explanation of their commitment to academic excellence.
- Good academic standing.

### Internship benefits:

Field Station internships allow students to develop key professional skills and independent projects under the mentorship and guidance of experienced staff and faculty.

- Competitive stipend—up to \$480 per week (\$10-12/hour at 40 hours/week; rate depends on experience)
- Free on-campus residence hall housing
- Vibrant work atmosphere
- Mentored professional development
- Skill development necessary for your career after Hiram College

A full listing of the project descriptions and guidelines for applications can be found below or at the Career Services website (<https://www.collegecentral.com/hiram/>).

Questions? Contact Dr. Jenn Clark ([clarkjm@hiram.edu](mailto:clarkjm@hiram.edu)) or Jim Metzinger ([metzingerje@hiram.edu](mailto:metzingerje@hiram.edu))

# APPLY BY FEBRUARY 21, 2020 FOR FULL CONSIDERATION

INCOMPLETE APPLICATIONS WILL NOT BE CONSIDERED

## REQUIRED APPLICATION MATERIALS

1. **Completed one-page application form**
2. **Cover letter addressing the following:**
  - a. The projects and staff/faculty directing the projects you are interested in
  - b. Your interests and motivations for this internship
  - c. Relevant experience to support your application
  - d. Why you wish to work with the professor(s) and/or staff member(s) you list in "a" above
  - e. Your long-term professional goals and how this internship fits those goals

(Check out <http://ux1.eiu.edu/~aalvarado2/TipsforREUApps20150407.pdf> for some great pointers on making the most of your personal statement and letter.)
3. **Current resume**

Include your work history, relevant skills, relevant course work, and names and contact information for three professional references (one of your references must be your academic advisor).
4. **Current unofficial transcript**

Project descriptions can be found within this call for applications below. For questions regarding specific projects, please contact the listed supervisor.

**SUBMIT YOUR APPLICATION MATERIALS IN A SINGLE PDF DOCUMENT IN THE ORDER OUTLINED ABOVE TO [careercenter@hiram.edu](mailto:careercenter@hiram.edu). THE SUBJECT OF YOUR EMAIL SHOULD READ: FIELD STATIONS SUMMER INTERNSHIP APPLICATION\_YOUR LAST NAME. YOU MUST PROVIDE A SIGNATURE ON YOUR APPLICATION FORM.**

**NOTE: If you are selected for a summer internship, you will be required to apply for work study eligibility. Work study is NOT a requirement for employment.** Please note that there are steps you must take before you can apply for work study eligibility. First, you must complete a 2020-2021 FAFSA ([fafsa.ed.gov](http://fafsa.ed.gov)) and if you are awarded financial aid, a verification form must then be completed ([hiram.verifymyfafsa.com](http://hiram.verifymyfafsa.com)). You are encouraged to begin this process immediately. **Please note that applications for summer 2020 work study are not available until after the application deadline** (usually available in early March) and must be completed if awarded summer financial aid by **March 15th**. Contact the Financial Aid Office with questions regarding financial aid and work study.

**Review of applications will begin on FEBRUARY 22, 2020 and will continue until positions are filled.**

**Project supervisors will contact you via email if you are selected for an interview.**

### **Stipends, housing and expectations:**

Each opportunity includes a stipend of up to \$480 per week (\$10-12 per hour for 40 hours) and housing in a Hiram College residence hall or available FS housing for agreed upon term of internship (usually 8-15 weeks). The pay scale is dependent on experience and prior employment history at the Field Stations. Interns are expected to work a minimum of 36 hours per week for the entire project length unless other arrangements are made with the supervisor(s). Unpaid time off is allowed for illness, vacations, and other events that prevent students from working provided appropriate prior notice is given to the supervisor(s) and to the management staff of the Field Stations. See the description above about the expectations for general work and maintenance expected from all student interns. Further, each intern is expected to develop one-two posters reporting on summer work.

All students involved with animal-related internships at the JHBBFS will participate in the daily husbandry and routines involving the captive animal collection used for education. Some internships will require specialized training and/or a medical exam. Many of the positions will require work on weekends.

## Project Descriptions

### ECO-MANAGEMENT AND LAND STEWARDSHIP (JHBBFS)

**Project supervisors:** Jim Tolan & Emliss Ricks

**Contact:** [tolanje@hiram.edu](mailto:tolanje@hiram.edu); [rickseo@hiram.edu](mailto:rickseo@hiram.edu)

Students will work full time performing various aspects of Field Station stewardship. This work includes ecological management practices related to invasive plant eradication, enhancement and development of native grassland and meadow sites, seeding and growing native plants for inclusion in landscape projects, trail maintenance and light construction of bridges, boardwalks, and trail facilities, routine maintenance around buildings and facilities, including mowing, landscaping, and grounds work, pond management, display and cage design, construction, and maintenance. Interns will be operating tractors and implements, power tools and chain saws, and will be trained to safely work with selected herbicides. Students may be required to work some weekends and assist other work groups with various projects. Students may be selected to travel to the Northwoods Field Station for similar work.

**Start date:** 18 May 2020 **Project length:** 14 weeks

### ANIMAL CONSERVATION AND HUSBANDRY (JHBBFS)

**Project supervisors:** Jim Metzinger & Rebecca Moore

**Contact:** [metzingerje@hiram.edu](mailto:metzingerje@hiram.edu); [moorer1@hiram.edu](mailto:moorer1@hiram.edu)

#### **Wildlife Rehabilitation—Medina Raptor Center and JHBBFS:**

Each student will spend six-seven weeks living and working at Medina Raptor Center (MRC) to receive training and experience in raptor handling, restraint, stabilization, rehabilitation and care of their educational animal collection. The other six-nine weeks of the summer will be spent working in the JHBBFS wildlife rehabilitation program, general animal care and work crew duties. Students will conduct an independent project and prepare a presentation for the fall Ohio Wildlife Rehabilitators Association (OWRA) conference in Columbus. Interns will be required to work at the Field Station a minimum of 5 hours/week for the academic year following the internship. Students will be required to work most weekends for the 12-15 weeks and assist other work groups with various projects. **Your own reliable transportation is required.**

**Start date:** 17 May 2020 **Project length:** 6 weeks at MRC and 6-8 weeks at JHBBFS

### ANIMAL CONSERVATION AND HUSBANDRY (JHBBFS)

**Project supervisors:** Jim Metzinger & Rebecca Moore

**Contact:** [metzingerje@hiram.edu](mailto:metzingerje@hiram.edu); [moorer1@hiram.edu](mailto:moorer1@hiram.edu)

#### **Husbandry, Behavioral Research, and Food Production:**

Working with White Winged Wood Ducks, Trumpeter Swan and Madagascar Teals, with a focus on husbandry and enrichment, breeding behavior, pair bonding, and brood rearing when applicable. Research will incorporate use of cameras in the endangered waterfowl facility and will examine the behavioral aspects of nesting and brood rearing of both species. Additionally, interns will be trained to provide care to all animals including native, injured and orphaned animals that enter into the rehab center on the JHBBFS property. All students will be required to work most weekends for the 15 weeks and assist other work groups with various projects. Both before and after hours work is often required to provide care to any injured birds admitted into our bird rehab program. Interns will help to enhance Citizen Science projects and be involved in some ecological surveys at the JHBBFS.

Students will also produce various food products using aquaponics, hydroponics and routine farming practices. Food products will be harvested daily for animal use, and frozen for future use. Upkeep of various gardens on grounds will be the responsibility of all interns. Interns will also provide additional labor to JHBBFS infrastructure projects which could include cleaning, painting, general construction and other duties as assigned. Students will be required to work most weekends during the duration of the internship.

**Start date:** 17 May 2020 **Project length:** 14 weeks

#### **Wildlife Rehabilitation—Penitentiary Glen and JHBBFS:**

Students will travel to Lake Metroparks Penitentiary Glenn (PG) Wildlife Center in Lake County two full days per week (responsible for own transportation and expense of travel) to receive training in areas that may include: general wildlife rehabilitation, neonate/orphan rearing, emergency stabilization, daily husbandry of educational animals, and basic animal training for education programs. Three days/week will be spent working at the JHBBFS in the wildlife rehab program, general animal care and general work crew duties. Students will conduct an independent project and prepare a presentation for the fall OWRA conference in Columbus. Interns will be required to work at the Field Station a minimum of 5 hours/week for the academic year following the internship. Students will be required to work most weekends for the 12-15 weeks and assist other work groups with various projects. **Your own reliable transportation is required.**

**Start date:** 17 May 2020 **Project length:** 12-14 weeks with 2 days/week at PG



## EDUCATION AND COMMUNITY OUTREACH (JHBBFS & NORTHWOODS FS)

**Project supervisor:** Jane O'Brien

**Contact:** [obrienjs@hiram.edu](mailto:obrienjs@hiram.edu)

Students will design, coordinate and teach a variety of camp programs (Nature Camps, Art Camp, Specialty Camps) for students ages 3-17. Interns will also assist with school field trips, maintain and develop indoor and outdoor educational exhibits and signage, and have the option to travel to Northwoods to support student experiential programs (camp opening, Freshman Experience). Additionally, Education Interns will participate in Citizen Science projects (bee surveys, phenology garden maintenance, planting native grasses) and be involved in some ecological surveys at the JHBBFS.

**Start date:** 18 May 2020 **Project length:** 12 weeks JHBBFS only; 12-14 weeks JHBBFS and Northwoods FS

## FIELD-BASED SCIENTIFIC RESEARCH (JHBBFS)

**Project supervisor:** Dr. Jim Kercher

**Contact:** [kercherjp@hiram.edu](mailto:kercherjp@hiram.edu)

### Trace Gas Monitoring using Custom Built Sensors and Quadcopter:

Interns will develop skills in a variety of areas including field-based research, programming, electronic circuit development and data analysis and visualization. Students will be expected to develop, build and program small trace gas sensors that will be deployed on quadcopters at JHBBFS and other locations to be determined. Overall, the primary goal is to collect data over many seasons to observe changing trends in trace gas concentrations and to then correlate this data with local development of infrastructure (for example, fracking wells) to incorporate into environmental science, etc. Students are expected to be willing to spend time in the lab and in the field. They will be expected to develop electronic sensors, program, and become comfortable operating quadcopters. collect and analyze data daily. Although the trace gas monitoring is the primary goal, each quadcopter is cable of recording 4k video. We plan to record to develop a visual history of how the JHBBFS evolves over the years. This will potentially help us correlate changes in atmospheric sampling with changes in the landscape. Students will be expected to be willing to spend time in the lab and in the field to develop electronic sensors, program, and become comfortable operating the quadcopters.

**Start date:** June 2020 **Project length:** 8-10 weeks



## FIELD-BASED SCIENTIFIC RESEARCH (JHBBFS)

**Project supervisors:** Dr. Sarah Mabey & Jim Metzinger

**Contact:** [mabeyse@hiram.edu](mailto:mabeyse@hiram.edu); [metzingerje@hiram.edu](mailto:metzingerje@hiram.edu)

### RFID Bird tracking project using technology, animal tracking, biology and animal husbandry:

Intern will research and develop ways to improve an already existing RFID system to track animal movements. Work with interdisciplinary team of mentors (computer science, wildlife conservation, animal husbandry) to move RFID tracking system beyond proof-of-concept stage. Intern must be willing to receive training to handle and work with live animals (birds). Interns will cross-train with animal care staff, animal diversity team and computer science department and will have opportunities to assist other work groups with various projects. Intern should have a strong understanding of computer programming and a willingness to work with birds and other animal care interns. Intern will also research, build, install and trouble shoot a MOTUS bird tracking tower at the Field Station. Skills in working with small electrical components, welding components and testing electrical devices are suggested for this position.

**Start date:** 3 June 2020 **Project length:** 6-8 weeks

## FIELD-BASED SCIENTIFIC RESEARCH (JHBBFS)

**Project supervisor:** Dr. Sarah Mabey

**Contact:** [mabeyse@hiram.edu](mailto:mabeyse@hiram.edu)

### Wildlife Ecology and Conservation (terrestrial vertebrates):

Interns will gain experience in field-based research focused on population monitoring, biodiversity surveys, and research questions related to behavioral ecology of the birds and mammals of JHBBFS. Emphasis will be placed on migratory birds, nocturnal mammals, and conservation issues. Wildlife conservation research requires willingness to work long days including very early mornings (birds) and nights (nocturnal mammals) under potentially uncomfortable conditions (cold/heat/wet/bugs). Interns will cross train with wildlife rehab and waterfowl research internships. Students will be required to work some weekends for the 10-12 weeks and assist other work groups with various projects. This internship provides for the opportunity to develop an independent research project.

**Start date:** 17 May 2020 **Project length:** 10-12 weeks



## FIELD-BASED SCIENTIFIC RESEARCH (JHBBFS & NORTHWOODS FS)

**Project supervisor:** Dr. Jenn Clark

**Contact:** [clarkjm@hiram.edu](mailto:clarkjm@hiram.edu)

**Stream Restoration Monitoring:** The goal of this study is to continue a long-term monitoring effort to inventory invertebrate and fish communities within Eagle Creek. A substantial amount of time will be devoted to sorting and processing invertebrate samples in the lab. Additionally, a variety of abiotic parameters will be monitored on a bi-weekly basis (temperature, pH, substrate characteristics, etc.) within Eagle Creek and reference sites.

Students working on this project will also complete weekly butterfly and snake surveys at the JHBBFS to continue long-term survey efforts and spend substantial time sorting and identifying macroinvertebrate samples from previous summers. Additionally, students will participate as mentors in field ecology camps/workshops and some community outreach events. Projects will include a lot of heavy lifting, hot and buggy field conditions, and long field days.

This internship provides for the opportunity to develop an independent research project. Students may be selected to travel to Northwoods for 1-2 weeks at a time to work on research projects and help with camp activities. Your interest and ability to travel to Northwoods should be discussed in your cover letter.

**Start date:** 1 June 2020 **Project length:** 10-12 weeks JHBBFS only; 12-14 weeks JHBBFS and Northwoods FS  
Note: start date will be earlier for internships lasting more than 10 weeks.

## INDEPENDENT PROJECT (NORTHWOODS FS)

**Project supervisor:** Dr. Jenn Clark

**Contact:** [clarkjm@hiram.edu](mailto:clarkjm@hiram.edu)

This summer you are invited to submit a proposal for an independent project at the Northwoods Field Station. Projects must focus on one or more of the following: field-based scientific research, environmental education, community outreach, land stewardship. In addition to submitting the general application materials, you must also include a proposal that includes the following:

1. Project title
2. Proposed dates and timeline for completion of the project
3. Taxa to be studied (if relevant; permits may need to be acquired)
4. Statement of purpose
5. Objective of the study
6. Design/Methodology/Project plan

Projects will be reviewed and either approved or rejected by the Director of the Northwoods Field Station and members of the Field Station Executive Committee.

## FIELD-BASED SCIENTIFIC RESEARCH (JHBBFS)

**Project supervisors:** Dr. Julie Maxson

**Contact:** [maxsonjm@hiram.edu](mailto:maxsonjm@hiram.edu)

**Potential Medicines of the James H. Barrow Biological Field Station:** The sessile nature of Plantae Kingdom members dictates an ability to defend against predation and adapt to environmental changes in place. Production of secondary metabolites provides one such mechanism of response. These metabolites have also served as medicinal remedies for humans since the beginning of human kind. This project will explore the unique variety of bryophytes (mosses and liverworts), pteridophytes (ferns and horsetails) and the spermatophytes (gymnosperms and angiosperms) found at JHBBFS for their anti-cancer properties. Initially, extracts from intact or anatomically separated regions of 25-30 plant species will be prepared and tested on leukemia and MCF-7 breast cancer cells for their ability to induce programmed cell death. Successful chemotherapeutic extracts can be subsequently fractionated into active components or further analyzed for their cellular mechanism of action by examining the activity of known programmed cell death proteins.

Students are expected to aid in identification of plant taxonomy through online resources, learn aseptic technique of cell culture and proper freezing of cell stocks, maintain viable cell cultures, prepare plant extracts and analyze their effects on programmed cell death of leukemia and breast cancer cells.

**Start date:** 1 June 2020 **Project length:** 10 weeks

## CARETAKER APPRENTICESHIP (NORTHWOODS FS)

**Project supervisors:** Dr. Jenn Clark

**Contact:** [clarkjm@hiram.edu](mailto:clarkjm@hiram.edu)

This internship is provided over a two-week time period to become accustomed to what it takes to be the caretaker of the Northwoods Field Station. Over the years, several students and alumni have served as caretaker for a full summer and this program will provide training in a variety of skills including but not limited to general maintenance and construction, planning and cooking meals for large groups, and serving as a guide to camp visitors of all ages, and general. The intern should desire to be the caretaker in future years and also be comfortable in remote wilderness and the ability to be independent and reliable. **Your own reliable transportation is necessary.**

Note: Students that apply for this internship may be able to pair it with other JHBBFS and Northwoods internships and should clearly articulate this desire in the cover letter.

**Project length:** 2 weeks in June, July, or August, please indicate which month(s) you would be available in your cover letter. Exact dates will be determined based on visitors at camp.