



**MORGAN**<sup>TM</sup>  
PATUXENT ENVIRONMENTAL AND  
AQUATIC RESEARCH LABORATORY

**Morgan State University  
Patuxent Environmental and Aquatic Research Laboratory (PEARL)  
2025 Summer Internship Program**

Please complete this document and email to [PEARL-Internship@morgan.edu](mailto:PEARL-Internship@morgan.edu).  
Be sure to attach your resume and unofficial transcript(s)

**Due by February 14, 2025 for best consideration**

*\*\*Incomplete applications will not be considered\*\**

***Personal Information***

Full Name: \_\_\_\_\_  
*First Middle Initial Last*

Email Address: \_\_\_\_\_

Home/Permanent Address: \_\_\_\_\_  
*Number & Street Apartment #*

\_\_\_\_\_  
*City State Zip Country*

Cell Phone: \_\_\_\_\_

***College or University Information***

Name of School: \_\_\_\_\_

Student's School Address: \_\_\_\_\_  
*Number & Street Apartment #*

\_\_\_\_\_  
*City State Zip Country*

Major: \_\_\_\_\_

Minor (if applicable): \_\_\_\_\_

Current Class Year: \_\_\_\_\_ Freshman \_\_\_\_\_ Sophomore \_\_\_\_\_ Junior \_\_\_\_\_ Senior  
\_\_\_\_\_ Recent Graduate

Expected Graduation Date (MM/YYYY): \_\_\_\_\_

Current GPA: \_\_\_\_\_

Please list any science, mathematics, or social science related course you have taken as an undergraduate student:

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***Other Information***

List any internships you have completed:

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List any honors you have received, honorary organizations to which you belong and offices held:

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List any volunteer experience you have completed:

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***Housing Information***

Do you require housing? Note: The PEARL facility is NOT in Baltimore, but is located in St. Leonard, MD, 80 miles south of the Morgan State main campus in Baltimore.

\_\_\_\_\_ Yes, I require housing to participate in this program.

\_\_\_\_\_ No, I live locally in Southern Maryland and do not need housing.

\_\_\_\_\_ No, I have another housing option that does not require me to stay in PEARL housing.

## **Research Projects**

The potential research projects for 2025 Summer Interns are listed below. Please select three that you are most interested in. ***Please only select three projects.*** Note: projects may deviate from the listed descriptions based on the needs of the mentor(s).

### **\_\_\_\_\_ Aquaculture Project 1: Developing Better Oyster Production Techniques for Aquaculture**

*Project Description:* Interns will have the opportunity to work on oyster spawning, feeding experiments, sampling for genetic analyses, and designing and testing gear. Interns will also learn basic day-to-day operations in a shellfish hatchery.

*Involves:* Labwork, fieldwork, data analysis, boat time

*Mentors:* Dr. Ming Liu, Brittany Wolfe-Bryant

### **\_\_\_\_\_ Aquaculture Project 2: Introduction of Soft-Shell Clams to Maryland Aquaculture**

*Project Description:* Interns will have the opportunity to work on soft-shell clam spawning, heat stress tests, sampling for genetic analyses, and designing and testing gear. Interns will also learn basic day-to-day operations in a shellfish hatchery.

*Involves:* Labwork, fieldwork, data analysis, boat time

*Mentors:* Dr. Ming Liu and Brittany Wolfe-Bryant

### **\_\_\_\_\_ Biogeochemistry Project: Carbon Cycling in Tidal Marshes and Oyster Aquaculture Facilities**

*Project Description:* Interns will conduct fieldwork and lab work analyses to determine concentrations and composition of carbon in water samples taken from tidal marshes and oyster aquaculture facilities. Interns will learn how to collect water samples in the field and how to analyze them on several instruments in the Biogeochemistry Laboratory.

*Involves:* Labwork, fieldwork, data analysis, boat time

*Mentor:* Dr. Amanda Knobloch

***Additional projects listed on Page 5***

### \_\_\_\_\_ Ecology Project 1: Blue Crab Survey

*Project Description:* Interns will gain experience as field biologists for the summer, monitoring the Chesapeake Bay's blue crab population. Experiences will include collection, management, and analysis of environmental and catch data from a long-term scientific survey. Previous experience with R or RStudio statistical software will be helpful.

*Involves:* Boat time, fieldwork, data analysis

*Mentor:* Dr. Tom Ihde

### \_\_\_\_\_ Ecology Project 2: Training AI to Indicate Ecosystem Status

*Project Description:* Interns will use a variety of field techniques to develop surveys that indicate ecosystem status. Students will work closely with Dr. Michael Cyrana (Johns Hopkins University [JHU]), as well as Dr. Tom Ihde (PEARL) and staff members of JHU's Applied Physics Lab staff in the development of ecological indicators and training of Artificial Intelligence algorithms.

*Involves:* Fieldwork, labwork, boat time, data analysis

*Mentors:* Dr. Michael Cyrana (Johns Hopkins University), Dr. Tom Ihde

### \_\_\_\_\_ Ecology Project 3: Microplastics in the Chesapeake Bay

*Project Description:* Interns will work on identifying microplastics and developing an in-house library of microplastics using Fourier-Transform Infrared (FTIR) Spectroscopy.

*Involves:* Labwork, data analysis

*Mentors:* Dr. Chunlei Fan, Dr. Sulakshana Bhatt

### \_\_\_\_\_ Economics Project: Market Research and Economic Analysis of Seafood

*Project Description:* Interns will support data analysis, report writing, and the development of infographics related to market and economic analyses of seafood consumer grocery store purchase data, with an emphasis on salmon produced through Recirculating Aquaculture Systems (RAS).

*Involves:* Literature review, data analysis, report writing

*Mentors:* Dr. Scott Knoche, Dr. Kehinde Ojo

## PEARL Summer Internship

- This internship will provide students with the opportunity to work on a research project with a faculty mentor(s), attend professional development opportunities, visit other scientific facilities (schedule permitting), and network with peers and researchers.
- The Morgan State PEARL is located in St. Leonard, MD within the grounds of Jefferson Patterson Park and Museum (JPPM), not in Baltimore. Interns will be working on site at a field station located in a rural area. Interns selected for housing at the facility will be living in historic buildings on JPPM grounds.
- This internship begins June 2, 2025 and ends August 8, 2025. It is a full time position. If you are aware of any travel or any circumstances that would require you to start later, end earlier, or take time off during the internship, please list them below:

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- You are expected to participate fully in the daily operation of the laboratory to which you are assigned:
  - Attend any lab meetings, professional development sessions, posted seminars
  - Conduct research as outlined by your mentor
  - Participate in the Final Poster Session at the end of the internship
- This internship is open to US citizens and permanent residents who are enrolled as undergraduates in colleges and universities in the United States. Applicants who have graduated in the past two years are also eligible to apply (Graduation Date of May 2023 or later).
- Interns will comply with all safety and security procedures set forth by the Morgan State University PEARL.

**I represent and warrant that I have read and fully understand the foregoing statements, and that I seek employment under these conditions and agree to the above conditions. I attest to the accuracy of the information provided.**

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*Printed Name*

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*Signature*

## ***Additional Materials***

To complete your application, you must submit the following to [PEARL-Internship@morgan.edu](mailto:PEARL-Internship@morgan.edu)

- This application form
- Resume
- Unofficial Transcripts
- Personal Statement of Interest (not to exceed 500 words)