



## **Gulf of Maine Research Institute – University of Maine 2018 Summer Internship Program, Portland, Maine**

The Gulf of Maine Research Institute (GMRI) catalyzes solutions to the complex challenges of ocean stewardship and economic growth in the Gulf of Maine bioregion. Our dynamic fusion of science, education, and community gives us range to effect change from multiple directions, while our objectivity and commitment to collaboration make us the go-to organization for marine communities grappling with contentious issues, management transitions, and new business systems.

GMRI has established a formal, competitive summer internship program for graduates and undergraduates to support our staff on a portfolio of projects focused on fishery ecosystem research, community, and education programs. Internships at GMRI provide an opportunity to gain valuable work experiences at sea and in our lab.

GMRI is seeking interns for the summer of 2018. These are 10-week internships that usually run from early-June through mid-August. GMRI has a strong partnership with the University of Maine, School of Marine Sciences, and some of these positions may be supported and advised by University of Maine personnel based at GMRI.

Internships at GMRI are paid, and most, but not all, intern opportunities have funding at this time. Interested students are encouraged to seek fellowships and/or funding options directly through their university or college. GMRI is committed to assist candidates to identify funding sources to support their internship.

GMRI believes that a work environment is enhanced when diverse groups of people come together with diverse ideas. We strongly encourage applications from groups underrepresented in the marine science and policy fields, including minority candidates and first generation college students.

The Cooperative Institute for the North Atlantic Region (CINAR) is pleased to announce an opportunity for Undergraduate Fellowships for Minorities. Positions at GMRI concur with the approved CINAR project categories. For more information about CINAR and this opportunity visit their website at: <http://www.cinar.org/>.

**The GMRI 2018 Summer Internship Program positions are noted below. Application information can be found at the end of this document.**

## **Sustainable Seafood Program**

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The GMRI Sustainable Seafood program seeks an intern to investigate seafood preferences and shopping habits of New American, or immigrant, communities in the Portland, Maine area. There is anecdotal evidence that some New American communities eat more seafood than the average American consumer, and that these communities have preferences for a wider range of seafood products than the average American consumer. We wish to uncover whether New Americans have access to seafood that they prefer and whether locally underharvested products might meet their needs and preferences. This research will reveal if, how, and where New Americans are currently accessing seafood, whether they have access to seafood of their cultural preference, and whether New Americans' seafood preferences might be met with under valued and often unharvested seafood available from the Gulf of Maine.

### **Responsibilities/Tasks:**

- Review existing research on New American food preferences.
- Develop a research design based on models implemented in other market research or New American consumption habits studies.
- Implement a research study through surveys and interviews (or methods outlined in the research design).
- Summarize findings and recommendations for the local seafood industry in a final report.

### **Other General Responsibilities:**

- Participate as a member of the Community Department, attending all relevant team and staff meetings.
- Contribute to a safe and productive work environment.
- Behave and dress appropriately for a professional office atmosphere.

### **Required Qualifications:**

Successful candidates will have some exposure to market research and survey techniques; possess excellent written and verbal skills; and be able to meet and talk with new people. The best candidate will have a sincere passion for seafood and its relevance to diverse cultures.

## **Analysis of temperature change in diadromous fish habitats**

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GMRI's research team focuses on understanding the Gulf of Maine ecosystem and how it is changing. Over the past decade, temperatures in the Gulf of Maine have risen faster than almost anywhere else in the world. This warming has affected marine species such as fish and lobster. However, we have a more limited understanding of how it has affected other species—such as salmon, shad, and alewife—that spend different portions of their lives in different habitats that span the ocean, estuaries, and rivers. To investigate how temperatures are changing in these different habitats and their implications for diadromous species, the intern will help assemble water temperature data from rivers and estuaries along the East Coast and work with the mentor to analyze habitat-specific warming patterns.

### **Responsibilities/Tasks:**

- Conduct literature review on changes in water temperature across aquatic and marine habitats with a focus on the eastern United States
- Identify sources of long-term time series of water temperature data for estuaries and rivers and compile data from these sources
- Identify drivers of aquatic temperature change (e.g., air temperature, land cover, watershed position) and compile data on these factors at appropriate scales for analyses with water temperature data
- Assemble all time series data sets in Excel spreadsheets.
- Maintain proper metadata to document data sources, relevant contextual information, and data processing methods.
- Aggregate data to suitable time scales (e.g., daily, weekly, monthly) for analysis.
- Work with mentor to analyze temperature changes over time and identify related drivers.
- Synthesize project material and present results at end of internship.

### **Required Qualifications:**

- Basic computer skills, including experience using spreadsheets and conducting efficient web-based searches.
- Proficient user of Excel.
- Experience finding and downloading data via internet searches.
- Excellent written and verbal communication skills, as some data requests may be through email or phone.
- Basic skills in statistical analysis.
- Attentive to details.
- Ability to take guidance and work independently.

### **Other Preferred Qualifications:**

- Experience using R for data management and manipulation.
- GIS experience.

## **Casco Bay Aquatic System Survey (CBASS)**

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GMRI is seeking candidates for the summer of 2018 in the area of marine and fisheries ecology under the supervision of the Demersal Fisheries Ecologist. GMRI scientists are conducting a long-term sentinel monitoring program to monitor ecological conditions in Casco Bay and surrounding areas (including the Presumpscot River and up to 3 miles offshore). This ecosystem monitoring “corridor” will be instrumental in helping to keep track of long-term trends in a variety of ecological indicators including temperature, water quality, fish and invertebrate community composition, trophic interactions and fish health as these may respond to changes in land use practices and climate change.

The summer interns will assume the following tasks with the assistance and supervision of GMRI research scientists and associates:

- Water quality monitoring (temperature, dissolved oxygen, pH, secchi depth)

- Fish and invertebrate trapping
- Fish seining and angling
- Setting up video systems to monitor fish *in situ* and analyzing video footage
- Fish diet analysis and ageing (using otoliths and image analysis software)
- Plankton and fish egg/larvae analysis (from plankton nets)
- Data entry and some analysis
- Develop and populate databases and implement data quality assurance protocols\*
- Communicate and share results with GMRI staff

**Qualifications include:** Enrollment in a Bachelor's degree program (or recently graduated) in a scientific field related to marine research, with strong quantitative and computer skills; detail oriented, self-starter with strong organizational and writing skills; proven ability to work well independently and in teams. Familiarity with fish and invertebrate sampling techniques and fish ageing is preferred.

**Requirements:**

- Data entry skills, including ability to use Microsoft Excel software
- Basic skills in statistical analysis
- Comfortable on boats and outside in sometimes inclement conditions

**Snap-a-Striper: Harnessing the observational power of recreational anglers for stewardship of Maine's striped bass resource and fishery**

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Striped bass is an important component of the recreational fishery in coastal Maine. Unfortunately, recreational catches have declined in recent years without a clear understanding of the contributing factors. Understanding the origin and life history of fish caught in the fishery will provide insight into the reason for declining catches and what management actions would be effective in reversing this trend. The results of this study will inform local stewardship efforts of the only native population of striped bass in Maine and sustainable management of a fishery that contributes significantly to recreation and tourism in the state.

The Summer Intern will assist with the collection and analysis of striped bass data collected through the Snap-a-Striper program. Snap-A-Striper is a data collection program that is a collaboration between researchers at the Gulf of Maine Research Institute, the Coastal Conservation Association of Maine and local anglers. The program is aimed at collecting photos and the inner ear bones from striped bass throughout the fishing season. We will use this data to determine the origin (local vs. migrant) of our fish, information that can improve management of the striped bass resource. Further responsibilities will include data entry, statistical analysis of data, and synthesis of a report.

**Qualifications:**

- Enrollment in an undergraduate or graduate degree program (or recently graduated) in a scientific field related to marine research.
- Detail oriented self-starter with an ability to synthesize data and information, strong organizational and writing skills, and a proven ability to work well independently and in teams.
- Strong quantitative and computer skills, including basic coursework in statistics and familiarity with a programming environment such as R, will be advantageous.

- Experience preparing scientific reports and presentations.
- Knowledge of or experience in outreach with the recreational fishing sector is preferred.

### **Forecasting seasonal changes in the Gulf of Maine**

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The average temperature of the Gulf of Maine has increased rapidly. Along with the temperature changes have come changes in the seasonality in both the physical environment and in the distribution, abundance, and migration patterns of species in the region. We are broadly interested in characterizing how seasonality of the Gulf of Maine has changed and how this has impacted important commercial species.

For this project, we are seeking a highly capable intern to assist in the development of seasonal forecast products. The primary task would be to evaluate potential refinements in our annual lobster forecasts (see <http://www.gmri.org/lobster-forecast>), but we are also looking to explore other forecasting opportunities. This intern will be based in the Ecosystem Modeling Lab.

**Qualifications include:** Enrollment in an undergraduate or graduate degree program (or recently graduated) in a scientific field with strong quantitative and computer skills. Strong technical skills, including familiarity with a programming environment such as R or Matlab and training in mathematical modeling and/or statistics. Detail oriented self-starter with strong organizational skills and a proven ability to work well independently and in teams.

### **Pelagic Fisheries (Bluefin Tuna)**

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Atlantic bluefin tuna are a large highly migratory species distributed throughout most of the north Atlantic basin. They are seasonal visitors to the Gulf of Maine using this region to accumulate critical energy reserves utilized for subsequent migration and reproductive needs. Despite decades of study, critical life history information is lacking including age and stock structure, migratory patterns, age at maturity and energetics. The University of Maine and the Gulf of Maine Research Institute are collaborating on a long-term biological sampling program of Atlantic bluefin tuna to address some of these life history deficiencies and provide information to better inform the assessment and management community.

The summer intern will assist with data collection efforts which include engaging with commercial and recreational tuna vessels to collect biological samples. Interns will collect samples (tuna heads) from vessels around the Portland area, including two tuna tournaments in the beginning of August. Sample processing will include extracting otoliths, cleaning, weighing, sectioning and digitizing them for assessment of age and population structure. Muscle tissue will be removed and analyzed for lipid and energetic content as a metric to assess foraging success. Additional duties include data entry and basic statistical analysis. The intern will be expected to synthesize the project material and present a portion of their work at the conclusion of the internship program.

**Qualifications include:** Enrollment in a Bachelor's (or graduate) degree program (or recently graduated) in a scientific field related to marine research, with basic quantitative and computer skills; detail oriented, self-starter with strong organizational and writing skills; proven ability to work well independently and in teams.

**Requirements:**

- Data entry skills, including ability to use Microsoft Excel software
- Familiarity with the use of dissecting scopes and image processing preferably Adobe Photoshop
- Basic skills in statistical analysis
- The ability to lift up to 75 pounds
- Ability to work in field or laboratory setting conducting fish dissections

**For all our summer intern positions, successful candidates will have additional skills and attributes that are core to our organization:**

- Passion to learn combined with a strong desire to protect marine resources
- Desire to support the viability of the fishing industry and community
- Eagerness to learn about the Gulf of Maine ecosystem
- Interest to work independently and collaboratively
- Flexibility and willingness to work where needed during the internship experience
- Excellent problem-solving skills and strong attention to detail
- Solid research and analytical skills
- Desire to have a challenging experience
- Applicants must have a track record of student success and potential as demonstrated by GPA, research portfolio, prior work experiences and/or the recommendation of a professor.

**To apply for any of these summer intern positions, please [CLICK HERE](#).** *Note that you will be navigating away from the GMRI website to complete your application.*

**The application deadline is February 4, 2017.** Applications received after that date will be reviewed only if positions have not already been filled. GMRI will begin reviewing applications in February. Questions should be emailed to [jobs@gmri.org](mailto:jobs@gmri.org). However, we will not accept resumes sent to this address.

GMRI is proud to confirm its long-standing policy and commitment to providing equal access and equal employment opportunities in all terms, conditions, processes and benefits of employment without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, disability, genetic information, or veteran status. Our employment decisions are made without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, disability, genetic information, or veteran status.

Applicants and employees are encouraged to voluntarily self-identify their race/ethnicity, gender, disability status and veteran status to assist us in fulfilling various data reporting requirements of the federal government. This self-identification is completely voluntary, will be kept strictly confidential and separate from your application data, and used only to meet federal reporting requirements. Providing or declining to provide this information will not result in adverse action of any kind.