



## Hydrologic Modeling Internship

### *Assessing the Impacts of River Flow and Runoff on the Chesapeake Bay Ecosystem*

#### **Project Description**

NOAA uses computer modeling for a host of scientific purposes. In the Chesapeake region, NOAA models are used to forecast river flow and weather conditions, predict changes to fish populations, and simulate water quality based on nutrient loads. With this internship, NOAA will begin to connect river forecasting and modeling capabilities of the [Mid-Atlantic River Forecast Center](#) (MARFC) with the fisheries science and policy work conducted at the [Chesapeake Bay Office](#). This internship is offered in partnership with the [Chesapeake Research Consortium](#).

In this position, the intern will work with the MARFC's distributed hydrologic model to investigate impacts of river flow and runoff on oyster reefs in the [Choptank River](#) complex of Maryland. Activities will include calibrating or implementing the model in this coastal watershed to generate runoff and river flow simulations that can be used to determine the potential impacts of sedimentation, larval distribution, nutrient loading, or other parameters related to water quality and oyster ecology/biology. The intern will work directly with MARFC hydrologists to become familiar with the model. He/she will also spend time at NOAA's Chesapeake Bay Office in Annapolis to gain an understanding of NOAA's role in large-scale oyster restoration projects, and exploring opportunities to apply the hydrologic model to fisheries management issues such as effects of river flow on shad and herring. *Because of the skills needed for this position, we will consider graduate students or students who have completed their undergraduate degree, in addition to current undergraduates.*

#### **Opportunities**

This position offers an amazing opportunity to work alongside NOAA scientists and environmental managers. The intern will gain first-hand knowledge of cutting-edge hydrologic models and apply model and forecast data to real-world environmental management scenarios. The experiences and skills gained from the internship will be valuable to someone seeking further education or career development in computer modeling, environmental science, hydrology, water resources engineering, or other earth science discipline.

#### **Requirements**

- Motivated self-starter with ability to work independently
- College level coursework in physics, mathematics, and basic statistics. Coursework in hydrology, environmental science, hydraulics, and/or fluid mechanics is a plus, but not required.

- Strong computing and numerical analysis skills (e.g., experience with spreadsheets or statistical software). Familiarity with, or willingness to learn, basic Linux. Knowledge of GIS a plus, but not required.
- Must be a U.S. Citizen
- Must currently be enrolled in an undergraduate or graduate institution pursuing a degree in science or engineering, or have recently completed (within the last 2 years) an undergraduate degree.

**Work Location and Duration**

The intern will be stationed at the Mid-Atlantic River Forecast Center in State College, Pennsylvania. Occasional travel to NOAA Chesapeake Bay Office locations in Maryland is required. The position will begin in mid-May and conclude in mid-August (12 weeks). Computer and phone services will be provided.

**Compensation**

The intern will be reimbursed at the end of each month, for a total of up to \$4,000 for the equivalent of 12 weeks of full-time activities (480 hours). Funds are available to compensate interns for occasionally required work-related travel. Candidates should expect to follow a normal weekday work schedule (roughly 9-5, M-F) with occasional variations for possible field work or other activities. No benefits are provided. A small housing stipend is available for those needing it, and we offer assistance in arranging local housing.

**Application Instructions**

Please email a short cover letter, résumé, and two references (phone numbers and e-mails) to Dave Jasinski, [djasinsk@gmail.com](mailto:djasinsk@gmail.com), by February 21, 2014. Please be sure to indicate the position you are seeking in your cover letter.