



# Career of the Month

Summer 2008, Science in the Workplace: Based on Interviews by *Megan Sullivan*

## Oyster Wrangler

Did you know that oysters, simply by eating, filter the water they live in? An adult oyster can filter up to 225 L of water every day! In addition, oyster reefs play the important role of sheltering many fish and crab species. Today, the Chesapeake Bay's oyster population is dangerously low—down to only a few percent of its historic level. To improve the overall health of the bay, we need to restore these water-purifying, habitat-providing marine animals. As an Oyster Restoration and Fisheries Scientist with the Chesapeake Bay Foundation (CBF), Stephanie Reynolds supports this important ecological resource.

### Overview of the work.

My job with CBF involves two distinct, but related, activities: field work and lobbying. Field work entails joining forces with volunteers and partner organizations to build reefs—out of shell or artificial substrate (e.g., crushed recycled concrete)—and plant oysters in the bay. Oysters filter pollutants by consuming them or shaping them into small packets, which are then deposited on the bay's floor. Their reef structures provide habitat for many other species, such as blue crabs, striped bass, weakfish, blue fish, white perch, croaker, black drum, and spotted sea trout. At one point, oysters in the bay could filter about 70 trillion L of water in a week's time; today, because of declining oyster populations, it would take the remaining oysters more than a year to filter that same amount.

As a lobbyist, my role is to be the voice of the bay, specifically of all its marine animals. For marine animals to survive, conservation-oriented laws and regulations must exist to protect their habitat. State legislature and government agencies are constantly reworking the laws and regulations that dictate how many marine animals can be harvested from the bay, what equipment can be used to harvest them, and even broader topics that affect water quality. CBF tracks all of the proposed laws and regulations, and educates decision makers. Lawmakers are not scientists, so they often need help recognizing how a particular law might impact the bay and other natural resources.

### Finding a niche.

I grew up sailing on the bay, and I care deeply about its health. I studied science writing as an undergraduate, with a minor in biology (so I was not technically a science major). After college, I spent eight years as a professional sailor, working my way up from deckhand to captain. During that time, I worked on boats that took students out to study marine biology, which led me to feel even more invested in protecting the marine environment. When it was time to find a lifestyle that did not require living out of a duffle bag, I looked to my home port: the Chesapeake Bay.

Once I recognized my desire to work in the marine sciences, I decided to pursue a master's degree. Before applying to graduate school, however, I had to take several prerequisite science courses that were not part of my undergraduate program. When I finished graduate school, I took my current job with the CBF. I love that I can be outside,



**Reynolds plants oysters to improve the bay's health.**

especially on the water, while helping the environment.

### Advice for students.

When considering a career, students should follow their passions. Those interested in marine science should get experience on the water through a swim team, canoeing, fishing, or a summer job as a tour-boat deckhand, for instance. Getting involved in extracurricular activities related to the environment—such as volunteering with a conservation organization, joining an ecology club, or starting a recycling program at school—shows leadership and a true commitment to helping our natural world.

To follow a traditional marine science track (e.g., university-based research), graduate degrees are typically necessary. However, a lot of careers related to marine science exist that do not require advanced degrees. The policy work I do—which can be done with a bachelor's degree—calls for biology knowledge, but also a con-

nection with people and the ability to communicate complex ideas clearly. Entry-level field technicians require a bachelor's degree in the sciences (and work outside most days!).

### *Making a difference.*

I think one of the best things about my job is the feedback I get when working with volunteers. So many people want to do something positive for the environment—to make a difference—and they just do not know how. Sometimes that includes legislators who want to pass good laws to protect the bay, but need help understanding what issues to tackle. I am able to guide those people to do things that can help.

The one issue that can be difficult to handle in my line of work is the magnitude of degradation in our marine environment. Millions of people live in its watershed, and all of their pollution runs down into the bay. It can be staggering to think about. I just have to keep believing that I am helping in some small way: a healthy

oyster reef here, a volunteer with a new interest in environmental stewardship there. My brightest hope is that the generation now in high school has had more environmental education than any generation in history. Today's students will be the lawmakers, business people, and scientists of tomorrow!

#### **BONUS POINTS**

##### **Reynolds' education:**

BS, science writing, biology minor; MS, environmental science

##### **On the web:**

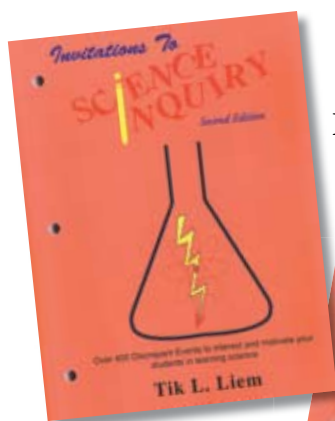
Chesapeake Bay Foundation ([www.cbf.org](http://www.cbf.org))

##### **Related careers:**

marine-science technician, environmental planner, baykeeper, environmental lawyer, aquaculture veterinarian, ecotourism guide, underwater filmmaker

# Educational Innovations, Inc.

## *An Amazing Collection of Experiments*



### **Invitations to Science Inquiry** *by Tik Liem*

The famous Dr. Tik L. Liem lives on in this amazing collection of more than 400 discrepant events to interest and motivate students in learning science.

Each page contains a list of the materials needed, a sketch, a points-wise, questions to ask and an explanation. Emphasis has been placed on the use of the simplest of materials found in the home or acquired easily. Many of the activities are counter-intuitive, challenging the students to develop new ways of thinking. 467 pages, softcover

#BK-375      \$69.95

### **Invitations to Science Inquiry Supplement** *by Tik Liem*

100 additional experiments.

#BK-377      \$35.95

**"This is one of the best science resources ever written."**

- Ron Perkins, retired Science teacher

# [www.teachersource.com](http://www.teachersource.com)

362 Main Avenue, Norwalk, CT 06851 Order Toll Free (888) 912-7474 Fax (203) 229-0740