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Degree: When, where, what, and what in?

I did my undergrad work at Harvard University, majoring in physics and chemistry. After a year working as a whitewater raft guide and kayaking instructor in the Smoky Mountains, I entered the MIT/WHOI Joint Program in Oceanography. I received my PhD in marine chemistry in 1989. My thesis involved using seasonal variations in oxygen levels as a measure for levels of primary production in the North Atlantic—measuring noble gas levels to control for nonbiological effects, and developing a computer model of the physics of the upper ocean to infer the amount of biological production from the measurements. I really enjoyed the research, which was pretty interdisciplinary (chemistry, biology, and physics) and varied (development of lab techniques, field work in Bermuda, data analysis, and computer modeling). And I really loved the intellectual culture of Woods Hole, where you can learn an enormous amount from interacting with colleagues and going to scientific talks on a wide range of subjects.

Did you stay in academia at all, and if so, for how long?

Although I had wanted to do scientific research for a long time, I was also always interested in education. So, after I finished my PhD I decided to go from science to science education, and started working in the nonprofit sector.

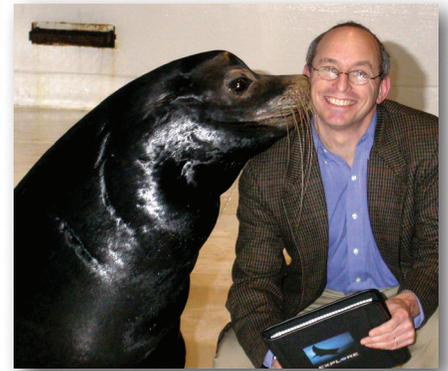
How did you go about searching for a job outside of the university setting?

During the last couple of years of my graduate work, I did a great deal of

career research and exploration. I used my undergrad career office, as well as the MIT career office, and I talked to everyone I could. I thought about a whole range of career options, including higher education, K–12 teaching, environmental consulting, working at a science museum, and others. In those days, there was not as much support for science careers outside of academia. I made extensive use of *What Color is Your Parachute*, a great book on career exploration that I continue to use and recommend to other people all the time. It helps you figure out what kinds of things you like to do (rather than just focusing on finding a specific job) and take charge of the process using informational interviews to build your network and advance your search (rather than just looking at job advertisements). I have used informational interviews to get every job I've had.

Is this the only job (post-academia) that you've had? If not, what else did you do?

After grad school, I spent seven years at TERC, an educational research and development firm in Cambridge, MA. I used my science background to develop educational materials and training for teachers, learned about how science education works, and developed skills in project management and grant writing. My work at TERC focused mostly on creating professional development programs for teachers and on creating learning opportunities outside schools in museums and science centers, supported by effective applications of technology. For several years, I directed the National Science Foundation-funded LabNet project, an electronic



community that served over 1,500 science teachers with forums for professional discussion, resource sharing, and collaborative projects.

What is your current job? What path did you take to get there?

My current position is Vice President for Programs, Exhibits, and Planning at the New England Aquarium in Boston, MA. I am responsible for development of mission-driven exhibits and programs, including oversight of exhibit design, visitor experience, volunteer and education programs, and strategic planning for the organization. We are working to redefine what it means to be an aquarium: combining education, entertainment, and action to address the most challenging problems facing the ocean. Through a wide variety of educational programs and conservation initiatives, we strive to make a lasting impact globally. We work to develop the next generation of ocean stewards through a variety of programs that combine learning, service, and stewardship, while focusing on key issues such as climate change and habitat protection. These efforts include immersive experiential learning and citizen science opportunities for youth, workplace learning and

career development for teens, volunteer service and stewardship programs for adults, and interpretation and communication training for staff. All involve a range of collaborations and capacity building initiatives with other organizations in Boston, New England, and across the United States.

When I was at TERC, I became interested in learning opportunities outside of school, where it seemed possible to provide support for really effective learning, free from all the constraints and requirements of a classroom. I did several projects that involved science museums, and realized that this was a fun and interesting field. When I heard that an oceanographer had been recently hired to run the New England Aquarium, I decided it would make sense to talk to him. That informational interview ultimately led to being hired as Director of Education. This job entailed responsibility for overall leadership, development, delivery, and evaluation of education programs—all of which reach more than one million Aquarium visitors, and thousands more through outreach to schools, youth, and community organizations. I was later promoted to my current position.

What did your oceanographic education (or academic career) give you that is useful in your current job?

My time in Woods Hole helped me to learn a lot of science, but even more importantly, to ask good questions. I still use that skill today whenever we are facing an interesting challenge, as well as using the analytical and research skills I learned to solve problems. And it really helps to understand the nature and process of science when you are in the business of science education. I also continue

to collaborate with many scientific colleagues at WHOI and elsewhere.

Is the job satisfying? What aspects of the job do you like best/least?

I love my job and feel fortunate to be able to do the work I do. I like the varied challenges, the need to work in teams across different disciplines, the opportunities to collaborate with other people and organizations around the country, and the visible impact of the work.

Recently, I watched a documentary on the Apollo 8 mission. The astronauts talked about how it felt to orbit Earth, to see it for the first time as a blue planet—because that is what Earth is. I was very moved to hear these hardboiled pilots and engineers in tears talking about how beautiful Earth looked, and how they missed it when they headed off toward the moon. When you step back and look at the big picture, you realize that it's the only Earth we've got and we need to take good care of it.

How do we help more people see the connections between themselves and the planet we need to protect? At the New England Aquarium, we have been working on how to do this, using the power of aquariums, zoos, and nature centers to inspire, educate, and engage the public. There used to be a focus on finding the little things we can do to make a difference. But given the scope of the problems we face, we need to do big things and make a big difference. We need to work together to realize our potential as citizens, not just consumers, to change how we function as a society. For example, in Boston we have made great improvements in public transportation, a new greenway, bike sharing, bike lanes, ferries, and water taxis, all of which help

to create a greener and more livable city.

At the Aquarium, we have been working to create tools and training to help environmental educators across the country learn how to communicate about issues such as climate change in a way that provokes thinking and discussion. We are building a national learning and support network that will help to transform the culture of communication at more than 150 informal science education centers over the next several years. We believe that we can train enough voices in proven communication techniques to change the national discourse around climate change to be productive, creative, and solutions focused. It is really satisfying to know that this work will have a big impact.

Do you have any recommendations for new grads looking for jobs?

I think it's really important to take the time to think about what you find inspiring and meaningful, and then use that as the basis for a job search. Make effective use of networking and informational interviewing to maximize your opportunities. Don't be afraid to explore new and nontraditional options—a career path does not need to be linear. Finally, keep learning and reflecting on your experiences over time—it's never too late to change direction.