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Degree: When, where, and what in?

I completed a BS in oceanography at the University of Washington (UW) in 1986, with an emphasis in geological and physical oceanography. I earned my master's in 1996 and my PhD in 2000 in physical oceanography at the University of Delaware, where my research focused on circulation processes of coastal lagoons, estuaries, and estuary-shelf exchange.

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

I worked in academia for six years following graduate school. I was a Postdoctoral Fellow for two years at the School of Ocean Sciences at the University of Wales, Bangor, UK. There, I worked on a European Union project aimed at understanding eutrophication issues in regions of restricted exchange, which took me to Scotland and Sweden for fieldwork. I returned to the United States via the University of Maine, School of Marine Sciences. There, I was a research oceanographer for four years, working primarily in the Gulf of Maine.

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

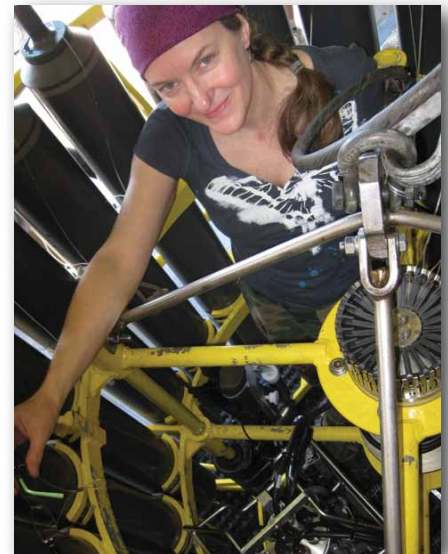
While an undergraduate, I sought employment/internship opportunities by looking at student announcement boards, talking to professors, and visiting a departmental career counselor. I landed an unpaid summer internship working for a consulting company on a sewage treatment plant siting study near Puget Sound. This experience included oceanographic field work and collaboration with other consultants and

government agencies working on the project. That internship led to a job at a different consulting company, primarily doing data entry at night while I finished my bachelor's degree. It was there I met a physical oceanographer, Lon Hachmeister, who was managing a series of field programs in the Arctic. He hired me as soon as he heard I had conducted CTD surveys from small boats. A week after graduation from the University of Washington, I found myself on the North Slope of Alaska, embarking on my career in oceanography.

Later, I got onto the appropriate registers for state and federal agencies whenever they opened, even though I was not looking for a job. I have on occasion submitted a blind application in a job search. However, I've been recruited or notified of an opening for my most significant jobs, including my current position at Sea-Bird Electronics. The importance of working, networking, and reaching out to peers, colleagues, and mentors cannot be overstated.

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

I actually worked professionally as an oceanographer for seven years in non-academic settings prior to pursuing my graduate degrees. I worked at an environmental consulting company, mainly as an oceanographer on large-scale, multidisciplinary oceanography and fisheries monitoring programs in the Arctic Ocean. I also participated in other projects, including an extensive on-site air quality field study for Taiwan Power



Carol in March 2013. Hawaii Ocean Time Series (HOT) Cruise on R/V *Kilo Moana*, preparing instrumentation for deep-ocean testing.

Company. I left that position to become the scientific lead and agency coordinator for a statewide marine monitoring program at the Washington State Department of Ecology. While there, I streamlined monthly water sampling procedures and reduced costs by implementing CTD data collection from a floatplane. I also expanded the program to include more spatially and temporally extensive seasonal sampling to better understand what areas were most susceptible to eutrophication and other water quality problems.

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

I am a Senior Oceanographer at Sea-Bird Electronics, a company that manufactures high-accuracy, high-precision oceanographic sensors and instrumentation. I serve as an oceanographic liaison between the company and the marine

and freshwater scientific communities, working with scientists on data analysis and advising on methods for field applications, data collection, and data processing. As a seasoned practitioner, I provide oceanographic expertise within the company, particularly for research and development, where I assist with sensor characterization, testing, and optimization. I spend a lot of time thinking about and lecturing on such topics as spatial and temporal sampling from moving platforms, sensor response characteristics, and measurement errors and their causes. I also dabble in my own research interests in my spare time, which at the moment involves physical limnology of mid- to high-latitude lakes.

Early in my career, I would bring my instruments to the Sea-Bird factory, where I asked to observe the calibration process. I continued to interact with Sea-Bird scientists and engineers over the years, so they knew me well when they recruited me in 2006.

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

It taught me the core tools needed to be a scientist (e.g., math, scientific methods), and it helped me develop the discipline necessary to conduct scientific research, ask the relevant questions, and solve problems on my own. I became a better writer and public speaker in grad school. A key component to any successful graduate career is the advisor. Kuo-Chuin Wong guided me into becoming a competent yet humble scientist. One of my

favorite quotes from him was something he would say to me before important presentations: “You have to know something, but you also have to know what you don’t know.”

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

I have found satisfaction in every job I have held in oceanography, including this one. Today is an exciting time to be an oceanographer, given our access to amazing data sets and sensor technologies that have advanced oceanography dramatically just over the course of my own lifetime. To accurately and precisely measure temperature and salinity to three decimal places, a task critical in today’s Earth climate research, is not trivial. Yet, without this capability, oceanography would be set back a decade at least. At Sea-Bird, I enjoy being a part of a company that makes this sort of measurement possible.

You might say I get to work on everybody’s research project in some way, shape, or form. However, what I miss most in my current position is ownership of my own research projects. On the flipside, I get to work on research topics I never would have been exposed to had I stayed in academia. It is my job at Sea-Bird to be well versed in many aspects of oceanography, and this in turn requires a current and broad knowledge of the subdisciplines in our field, as well as competence in other closely related subjects, like limnology. It is a constant learning environment, much like academic research is, which keeps things interesting.

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

Stay current in more than just one discipline in your field. Try different jobs early in your career to start networking and to help you focus on what you really want to do. This might mean working for free on a research cruise for a professor who just needs bodies to run water samples, or cleaning labs and equipment after hours. In any job, you never know when you will meet that somebody who might help jumpstart your career. Because employers look for people who know how to work and who demonstrate that they can get along with others, sometimes in stressful work environments, your references become one of the most important parts of any job application. It only takes one mediocre referral to wipe out a perfect GPA. Finally, don’t expect to get paid much right out of school. Nobody goes into oceanography to get rich. However, when you enjoy what you do, that becomes part of your compensation. 