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CITATION

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# CAREER PROFILES Options and Insights

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## Degrees: When, where, what, and what in?

I received a BS in mechanical engineering from Stanford University in 1981, and a PhD in oceanography from the University of Washington (UW) in 1998.

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

After my earning my bachelor's degree, I went directly to industry. I spent 10 years in two different instrument companies (ophthalmic instruments and solid-state lasers) before returning to academia to pursue a graduate degree at UW. Following my PhD in physical oceanography, I spent two years in a postdoctoral position at the same institution pursuing a slightly different oceanographic area—heat flux from hydrothermal vents—largely because I was very attracted to that particular project and wanted in on the ground floor. At the same time, I taught several classes at various local institutions (community colleges and UW). Following the postdoc, I remained at UW, though not on a path to become a regular faculty member. In some respects, I've had two "careers," but if one considers the junction of science and engineering, I've really just dug into that intersection more deeply.

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

I held a few professional staff positions at UW after my postdoc position, the most significant of which started in late 2004 and continues to this day. I was asked to start up what amounts to a small instrument company within UW in order to serve the needs of both internal and external customers for an autonomous underwater vehicle called the Seaglider. To some extent, spending 10 years in industry before graduate studies played a role—I had experience in small instrument-building companies. I do still occasionally teach when asked by the school's director as my instructional ratings from students are generally good, but that's not my primary mission. My work as manager of the Seaglider Fabrication Center is something closer to running a corporate business unit, except that we are "inside" academia. Dealing with a large state educational institution as our "corporate owner" presents a different set of parameters than a normal for-profit business, but is quite challenging nonetheless.

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

For my first jobs (1980s), I used what was then a traditional approach: finding advertised positions at companies doing interesting work and speaking with the human resource managers, or getting recommended by people who knew others in those companies. Some companies sent recruiters to campus (a good way to learn a lot about a place without travelling) and, in other cases, I was recruited by search firms or friends who had moved to other companies.

For my post-PhD jobs, they are either things I found interesting and asked

the PI or program manager about, or are of my own making (e.g., starting a nonprofit).

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

Another significant job I've had is co-founding and continuing to operate a nonprofit that engages students in experiential learning on Puget Sound while collecting time-series data—Ocean Inquiry Project (see http://www.oceaninquiry.org). This effort engages me in a number of other related enterprises, ranging from a Center for Ocean Sciences Education Excellence (COSEE) program (Ocean Learning Communities) to a regional ocean observatory (NANOOS-Northwest Association of Networked Ocean Observing Systems), as well as allows me to keep up my informal teaching activities. I helped start the Ocean Inquiry Project during the latter part of my postdoc in 2000. One key feature is that we engage graduate students and undergraduates in the UW oceanography department to come teach what they are studying, thus providing an outlet for

them to develop skills in informal teaching while learning about Puget Sound.

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

All of my jobs have benefited from the broad oceanographic education I received as a graduate student in the 1990s, and many of them have also engaged the management and engineering skills I learned either on the job or as an undergrad in mechanical engineering in the 1980s.

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

I've found all of my jobs satisfying because I won't engage in ones that are not. That is one of my mantras—keep the fun-factor high. Life is too short to not look forward to accomplishing something worthwhile and satisfying every day. As for particular aspects, I think teaching can give some of the greatest rewards because even in the short span of a half day you can see real and measurable changes in people—it's great positive feedback.

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

Primarily, look for those activities and situations that you're enthusiastic about because that can overcome many other obstacles to a position. If your vocation is close to your avocation, then a high fun-factor is almost certain to follow. And, after being in a position for a while, if you're find yourself dreading going to work every day, recognize it, and work to either correct it within your company/organization or start looking for something else, or both.

## WINNIE LAU | Program Manager, Marine Ecosystem Services Program, Forest Trends (wlau@forest-trends.org)

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

I received my PhD in oceanography in 2005 from the University of Washington, where I studied the interactions between bacteria and phytoplankton in carbon cycling. Because of my interest in environmental sciences and languages, I also completed certificate programs in environmental management and technical Japanese. Prior to graduate school, I earned a Bachelor of Arts degree from the University of California, Berkeley, in integrative biology and environmental sciences.

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

I stayed in academia for only seven to eight months after earning my PhD. I received an American Association for the Advancement of Science (AAAS) Science and Technology (S&T) Policy Fellowship, so I left academia and have since been working on science and conservation policy and implementation.

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

I was quite lucky in that the AAAS S&T Policy Fellowship served as a very good transition from the university setting and opened many new doors. The fellowship program placed me in a position at the US Department of State where I worked on a variety of international science policy issues—from bilateral science cooperation with Japan to international ocean policies. I cannot say enough about this AAAS Fellowship Program, whose mission is to increase the role of science in policy making. While I was placed in a very policy-oriented position and agency, other fellows were placed in positions that involved more science policy advice (not laboratory or experimental science). I highly recommend that students and recent grads explore this option.

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

Nope, see below!

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

Currently, I am the program manager for the Marine Ecosystem Services Program at the Washington, DC-based international nonprofit organization Forest Trends. Near the end of my two-year fellowship term, I met with many people in the marine conservation field, an area that I wanted to pursue for my career, to learn about what opportunities there were and to figure out what next steps to take. I found my current job through one of the contacts I met via a colleague at the State Department before the job was even advertised!

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

In my positions at the State Department and at Forest Trends, I have had a few occasions where my knowledge of oceanography has helped me. One was while I was at the State Department working on the issue of iron fertilization as a climate change mitigation option. Another is in my current job looking into the potential of coastal marine environments as carbon sinks for developing market-based mechanisms for climate change mitigation (e.g., the carbon markets). In general, however, I would say that my skills in critical thinking, writing, and presenting developed and improved through working on my PhD and interacting with my lab mates are the skills that I have relied on the most. The critical thinking skills and the ability to absorb and digest new information quickly are invaluable in the policy as well as conservation fields.

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

My job is quite satisfying to me, and quite challenging as well. One of the reasons I left academia was to have the chance to solve more immediate real-world problems and to work with a variety of people more directly. I have had to interact with policymakers, multilateral organizations, businesses, and local communities, to name a few. I love working with people from all sectors and from all over the world. It is also one of the more exhausting aspects of my job, trying to understand multiple points of view or even just simply trying to organize a phone conference with people from around the world. On the whole, it is all worth it when we improve understanding between people or simply when I hear all the beeps of people joining the conference call.

The part of my job that I love the most is traveling to new places and seeing things that I would never see as a tourist or even as a resident in a foreign country. One of my most memorable trips was when I accompanied a World Bank team to Tanzania as an observer. We visited local fishing villages where there was no electricity and the people were very poor. The team leader told me that some of the villagers might only get to eat once a day. Yet, in one of the villages we visited (a more well-to-do one), they served us an abundance of the fish they caught, as part of their custom and pride. It really touched me and made me want to work harder to find resource management solutions that can help people around the world have better lives.

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

Looking back now, I definitely can see more clearly than I did when I was frantically finishing my thesis how one might go about looking for jobs. My first recommendation for any new grads would be to understand where your own passion lies, especially if you are not necessarily looking to stay in academia. This may seem obvious, but it is actually a very crucial step. I recently attended a career-development event and the presenter gave the best description of what a good 30-second "elevator speech" should be like. It is one that is succinct (one or two sentences) and describes what you are looking for and what you value. It is phrased in such a way that stimulates a conversation and invites members of your audience to share their insights about career mobility as well as their networks. This speech can be assembled easily if you know what you want.

My second recommendation is to talk with as many people from as diverse a network as possible. After each informational interview, a good practice is to ask the person you spoke with to recommend a few others with whom you can speak. This process will become like a phone tree, with you as the person doing all of the dialing. It is a great way to learn about jobs and career paths that you may not have known about, to establish a professional network, and even to find your potential job. I would advise being mentally prepared to set aside a fair amount of time for this task, but it is definitely worth the time investment. It is also helpful to keep a good record of those you speak with and who recommended them to you.

If you are looking to move outside of academia, there are a few fellowship programs similar to the AAAS Science and Technology Fellowship I received that can help open doors—such as the Knauss Fellowship (also known as the Sea Grant Fellowship), the Presidential Management Fellowship, and ORISE (Oak Ridge Institute for Science and Education) Fellowship with the Environmental Protection Agency. Even if you are not directly interested in policy, it might be worthwhile to spend a year or two in one of these fellowship programs because it can lead to many nonpolicy opportunities, such as working for a nonprofit organization on conservation science, for a consulting firm, or for a government agency doing analysis.