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CAREER PROFILES **Options and Insights**

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

My bachelor's degree (Princeton, 1988) was in Mechanical and Aerospace Engineering with a certificate in East Asian Studies. To help pay the absurd tuition, I participated in a work-study program with the US Army Cold Regions Research and Engineering Laboratory that included some cool—well, cold, really—summer jobs as a grunt on oceanographic research cruises in the Arctic and Southern Oceans. It was these work experiences that led me to consider oceanography for graduate school. Because the transition from aerospace engineering to physical oceanography is as easy as dropping “compressibility” and adding “Coriolis” to the equations governing turbulent fluids, I eventually managed to graduate with a PhD in physical oceanography from the MIT-WHOI Joint Program in 1995.

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

The border separating what is in and out of academia is pretty fuzzy, or at least I find it so. Toward the end of graduate school, my wife decided to take a postdoctoral position at a research hospital in Toronto. In order to follow her, I had to eschew the de facto next step in the oceanographic career conveyor belt (a postdoc at Scripps) and instead finagled a paleoclimatology postdoc at the University of Toronto, a field in



which I was perfectly and completely ignorant. This leap seemed at the time like a radical departure of sorts. Various Woods Hole Oceanographic Institution senior faculty certainly made clear that they felt I was committing academic suicide, though I was still technically in a postdoctoral position at a university. I stepped a bit further off the academic path after my postdoc. Nonetheless, in all of my jobs, I have managed to convince myself, naively, no doubt, that I still have a finger in the academic pie.

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

Life was clearly unsustainable as a family of dual postdocs, putting in crazy hours for abysmal wages, with one kid in day care and another on the way, so I routinely trolled various Internet sites and the back pages of *Nature* and *Eos*. I think I applied for about 100 jobs, some in academia, some in the private sector, and a few in the grey area in between. After 99 rejections, I lucked into what

looked like an interesting offer in the grey area, based in an exciting new location, with a decent salary. The long-term career prospects associated with this choice appeared to be zero, but I leapt into the void.

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

My first job was as “science officer” working in the PAGES (Past Global Changes) Project Office coordinating research being done around the world to quantify past climatic and environmental change. I was based in a small office loosely affiliated with the University of Bern, in Switzerland, funded with grants from the United States and the Swiss National Science Foundations. After three years, my boss retired and, following an international search, I replaced him as Executive Director. In all, I spent seven years working for PAGES. The job was not completely outside academia. In fact, one of the most appealing parts of the job was the opportunity to interact and publish with many highly respected, interesting academics from around the world. Although I managed to author a few papers and books along the way, after seven years of being perceived as outside academia, there was no easy path back to a traditional professorship. The PAGES project office still exists (<http://www.pages-igbp.org>) and the incumbent

Science Officer and Executive Director seem to be doing very well indeed.

My next job was as at the Intergovernmental Oceanographic Commission (IOC) of UNESCO in Paris, France, as director of the Global Ocean Observing System (GOOS). Working for the United Nations took me much farther out of academia, and brought me much closer to policy and management. On the other hand, it was a serendipitous return to the oceanographic milieu, in that much of my work at GOOS comprised advocacy for sustained, internationally coordinated, monitoring of the world ocean. Several of my colleagues at the IOC also had PhDs in oceanography. Remuneration in the United Nations is very good compared to academia, and it was nice that I did not depend on grants for my salary anymore. After seven years though, I got itchy again, and, because there are no opportunities to move within the sclerotic personnel system at UNESCO, I followed the same approach I had used successfully in the past. I applied for about a hundred jobs, and after 99 rejections managed to get an interesting offer. GOOS continues in very good hands (<http://www.ioc-goos.org>), and I still enjoy a bit of interaction with colleagues and friends from the community.

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

Currently, I'm head of climate change adaptation and terrestrial ecosystems in the Division of Environmental Policy Implementation at the United Nations Environment Programme, based in Nairobi, Kenya. Our adaptation work is mostly centered around demonstrating

the efficacy of “ecosystem-based” approaches, wherein we harness the natural resilience that ecosystems have built up in response to climate variability over many millennia, often in combination with engineered approaches, in order to reduce human vulnerability to anthropogenic climate change. An example would be taking measures to ensure barrier islands are naturally maintained as an adaptation to sea level rise, in order, for example, to reduce the stress on levees around New Orleans when hurricanes make landfall. I oversee about 30 professionals and a portfolio of about 100 million dollars, including projects in high mountains, dry lands, forests, riparian areas, and coasts, with funding provided by member states and international sources such as the Global Environment and Adaptation Funds.

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

Coming from an academic background, I was woefully unprepared for managerial challenges and the impact of political nuances. I've had to learn how to deal with them by trial and error and can boast some fairly burnt fingers as testament to how difficult this was. On the other hand, the oceanographic (or scientific) education has probably helped me jump fairly quickly between disciplines and to maintain a good level of healthy skepticism. In all the fields I've worked in—climate reconstruction, climate observation, and now climate adaptation—I've benefitted from being trained to analyze problems of all kinds by neglecting small terms and focusing on dominant drivers.

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

Yes, very. For about the first 10 years after my postdoc, I'd run into old classmates from graduate school, say at the ocean sciences meeting, and they'd all ask if I missed academia. Sure, I suppose I miss some aspects—teaching, for example, is something I would enjoy—but there are plenty of things I don't miss, too. Nobody asks this question any more. I hope it is because the answer is clear. I have been perfectly happy inside and outside academia, and, for most of my career, somewhere in the grey area in between. In every job I have had intellectual challenges that pushed me to my limits, successes that I felt proud contributing to, and wonderful colleagues to share the quotidian vicissitudes.

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

Don't pay attention to people whose advice is only to tell you to do what they did. At least this approach has worked well for me (irony intended). Don't be concerned by countless meaningless rejections. Don't make decisions based on what someone may perceive as the right thing to do in some predefined career path. Do put your trust in serendipity: the limitless, unpredictable, and unintended positive outcomes of whatever career choices you happen to make.

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

I received a bachelor of science degree in mathematics from Duke University in 1994, and was turned on to oceanography during an undergraduate semester at the Duke University Marine Lab followed by a course in physical oceanography. I received my PhD in physical oceanography from Scripps Institution of Oceanography/University of California, San Diego, in 2001. My dissertation research focused on mid-depth circulation and open-ocean deep convection in the Labrador Sea using observations from subsurface floats.

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

After earning my PhD, I was a post-doctoral scholar at the Woods Hole Oceanographic Institution (WHOI) in the physical oceanography department. I continued the same line of research from my graduate work for about 18 months before leaving WHOI to take a teaching position at Sea Education Association (SEA). SEA is a nonprofit, independent educational institution whose primary mission is to educate students onshore and at sea in the undergraduate SEA Semester program (<http://www.sea.edu>). While academic in nature, the SEA faculty position is quite different from a traditional faculty position in that its focus is primarily teaching, with no formal requirements for research.

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

About midway through my postdoc, I began looking at job listings for something *different*. I wasn't exactly sure what I was looking for, although I was very interested in teaching. I did some self-assessment and job search training by reading books about careers outside academia and talking with friends who had left academia. I mainly looked at academic listings that were different from traditional faculty positions, using resources such as *Eos*, *Chronicle for Higher Education*, and <http://higherjobs.com>. I was fortunate to live in Woods Hole, where SEA is located, and before applying for the position, I talked to a number of people who were familiar with the institution and the faculty position.

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

I have worked at SEA since leaving WHOI in 2003; however, my position at SEA has changed from Oceanography Faculty/Chief Scientist to Research Oceanographer.

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

As a SEA Research Oceanographer, I focus mainly on research into marine debris (i.e., ocean trash). For six years, I primarily taught undergraduates in the SEA Semester program, which includes six weeks of instruction and student research project development on our Woods Hole campus, followed



by a six-week research cruise aboard our sailing oceanographic research vessels. I typically taught two SEA Semester classes per year, with administrative responsibilities filling out the nine-month appointment. For a time, I used the remaining three months per year to continue my research at WHOI as a Visiting Investigator before shifting my attention to special projects at SEA, including new program development, and, ultimately, research into plastic marine debris. I was fortunate to receive federal funding to analyze plastic debris data that SEA has been collecting and archiving for more than 25 years. This research opportunity was also very timely, as it coincided with the birth of my daughter. While I'm no longer able to be at sea 12 weeks per year, my current position allows me to work part time and to stay active in the oceanography field.

CAREER PROFILES

Options and Insights

Oceanography includes “career profiles” of marine scientists who have pursued successful and fulfilling careers outside of academia. These profiles are intended to advise ocean sciences graduate students about career options other than teaching and/or research in a university setting.

Oceanography needs your help to make this careers column a success. Finding the right subjects is a challenging task, and *Oceanography* needs suggestions about who to profile. Please consult your roots, your Rolodex, or your iPhone or Blackberry contacts folders and provide *Oceanography* with information about people you know whose career paths might inspire and inform the next generation.

Do you have suggestions? Please send their contact information to ekappel@geo-prose.com.

www.tos.org/resources/career_profiles.html

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

I have learned a tremendous amount in every step of my career. In my formal training, I gained a solid foundation in physical oceanography that I now apply to my current research in the distribution of floating plastic debris (not an application I would have anticipated). More generally, I honed my analytical and critical thinking skills, became comfortable with public speaking, and learned how to write. While scientific writing is quite specialized, clear and concise writing is a universally necessary skill. In my teaching position at SEA, I expanded my oceanographic knowledge and intellectual interests by advising students in research projects spanning the four major disciplines. I now think of myself as more of a generalist, trained in physical oceanography but able to apply my knowledge and skills to a variety of oceanographic questions. In my research position I have also learned how to better convey scientific information to the public. Because of the strong public interest in marine debris (commonly referred to as “garbage patches”), I have had the opportunity to participate in many media interviews and to write for a variety of audiences.

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

The job is very satisfying because I am continually challenged to make my way in relatively uncharted territory (my position is new at SEA). I love the independence and flexibility that comes with my research position, but I now have the pressure of finding continued funding to support it. In many ways I have ended

up in a more “traditional” academic job, but I have come to this position in my own time and on my own terms. I do miss teaching and being at sea, and I hope to ultimately incorporate these activities back into my career. As for any working parent, one of the hardest challenges is the work-family balance—always wanting to do more on both sides of the equation.

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

I never would have anticipated the path that my career has taken in the 10 years since receiving my PhD. I believe that it is important to keep your eyes and mind open to positions you might not have considered, while keeping sight of the kind of work you enjoy and the kind of lifestyle you would like to lead.