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CITATION

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CAREER PROFILES Options and Insights

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

At Southampton University, where I pursued an undergraduate degree in marine sciences, I focused on physical oceanography, and ultimately satellite oceanography, for my honors project, looking at patterns of large-scale air-sea interaction in scatterometer winds and sea surface temperature (SST) data. Based on this work, I was able to be first author for a paper on Rossby wave propagation in SST!

After finishing my degree, for about 18 months, in between substantive traveling and sailing, I did some contract work at Southampton for the Natural Environment Research Council. During my travels, with a set of acetate slides in my backpack, I looked for an interesting place to do further studies and ultimately signed up for a master's degree program in climate dynamics at the University of Victoria, Canada. There, I examined changes in the Sea of Okhotsk over 50 years using hydrographic data. I had a great time living on the west coast of Canada—but didn't enjoy the endless number crunching the project required.

I decided that perhaps research was not for me, and looked into science writing and communications opportunities. After returning to the UK and dabbling in a bit of watersports broadcasting (filming and local radio for sailing events), I took a job in science coordination. I then realized that if I wanted to lead programs, I needed more science credibility so went to Hobart, Australia, to join the Quantitative Marine Sciences PhD program (a joint University of Tasmania-CSIRO program). My PhD project, which focused on drivers of variability in the East Australian Current, provided a great opportunity to connect up a story from hemispheric to gyre scales, to the East Australian Current, and then to work with biologists to see how changes affected ecosystems.

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

I largely had just short-term contracts as a research assistant between studies. I realized early on that I enjoyed the people side of science and connecting up the bigger picture, and that my strengths would be best focused on coordination of science rather than on the science itself.

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

While pursuing my academic degrees, I was fortuitously based in collaborative institutional environments, where a university and a government research agency were working together. This exposed me to a broader range of options while still working in the public sector. The World Ocean Circulation Experiment was coordinated in Southampton when I was there, and that really caught my imagination.

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

I have had a number of national and international coordination positions. I was a staff scientist for the international CLIVAR project office in Southampton between my master's and PhD degrees, then after my PhD, I worked as Scientific Officer for Australia's Integrated Marine Observing System in Hobart.

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

As Scientific Officer for Ocean Observations at the World Meteorological Organization, I work with the Intergovernmental Oceanographic Commission and through a number of programs to develop and improve sustained ocean observations: the Global Climate Observing System, the Global Ocean Observing System, the World Climate Research Programme, and the Joint WMO-IOC Commission for Oceanography and Marine Meteorology. I have largely taken science coordination roles with increasing responsibility and complexity. Working across four intergovernmental programs and two intergovernmental organizations is probably the pinnacle of complexity!

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

I've needed a strong background in oceanography throughout my career. My current job largely focuses on connecting things—people, ideas, projects, energy—so the ability to think laterally is a big plus. When I worked in Australia, engagement across a broad range of organizations and government portfolios helped me to understand and leverage institutional priorities. In addition, I have found mentors crucial in navigating a nonstandard career trajectory.

Is there any course or other training you would like to have had as part of your graduate education to meet the demands of the job market?

Presentation skills, proposal writing, and project management are essential in both academia and program coordination but are not taught formally. It would

be great to have development of these skills embedded in graduate programs along with engagement, negotiation, and chairing/facilitation, rather than leaving them to be learned by doing.

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

I am fortunate to work with a dynamic international community of scientists. The exciting part of this job involves identifying the locus of energy in the community, and opportunities for making progress on particular issues. Of course, working within the intergovernmental world can be bureaucratic and slow moving, and there will always be boulders to push uphill, but some things just need to be pushed forward slowly. There are also opportunities to make significant progress, for example, when the energy in the community aligns (when the need is clear, the scientists are interested, and funders are engaged). The skill is in determining where to engage the intergovernmental machinery to help things along (that is, fostering international consensus or agreements between groups of nations) and running activities and projects at a grass roots level within the community when it is more appropriate.

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

Identify mentors throughout your career' who are in roles that you aspire to and people you respect. Ask them if they would be willing to mentor you by helping you foster a professional network, and also advising on "soft skills" such as chairing, engagement, and negotiation—the things you are not taught!

ANDREA DELL'APA | Marine Restoration Specialist, Ocean Conservancy's Gulf Restoration Program (dellapa.andrea@gmail.com)

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

I received my MS in marine biology and oceanography in 2005 from Università Politecnica delle Marche in Ancona (Italy), where I studied changes in the acoustic behavior of bottlenose dolphin in a controlled environment under external sources of anthropogenic disturbance. In 2004, I was selected under the Biodaqua exchange program between Canadian and European marine biology faculties for a three-month summer internship at the University of New Brunswick in Saint John to study the bioacoustics of the Weddell seal. After graduating, I continued to seek international research opportunities to broaden my professional skills and experience. In 2007, I volunteered in a Cape Town, South Africa, research project studying predator-prey relationships between white shark and Cape fur seal. I fell in love with South Africa and returned in the summer of 2008 for a two-month internship at Oceans Research in Mossel Bay to receive training in acoustic telemetry to study daily movements, behavior, and residency patterns of white shark. I then decided to return to academia to focus on shark acoustic telemetry, and earned my PhD in coastal resources management from East Carolina University (ECU) in 2013. There, I researched the international trade and fishery management of spiny dogfish and worked on providing alternative management strategies for the US North Atlantic stock.

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

Toward the end of my PhD, I was selected for the John A. Knauss Marine Policy Fellowship, and, basically, after graduation, left academia. In 2014, in pursuit of my fellowship, I moved to Washington, DC, to work at the National Marine Fisheries Service (NMFS) Office of Management and Budget. That was my first professional experience in the federal government, and it pretty much set the stage for my professional career from then on, first in the federal management of natural resources and then in the nonprofit sector.

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

My personal strategy for job hunting outside of academia (and this also works well in the university setting) is to keep my eyes open while networking, attending meetings and conferences, navigating the web extensively, and making a list of key people to contact regarding potential opportunities. My first job after graduating with my master's resulted from an email that I sent to a prominent Italian researcher whom I knew by name only and deeply admired. At the time, she had just been hired by a new nonprofit organization with a freshly funded grant (lucky me!), and after looking at my CV and background, she asked if I was interested in supporting her new work. Of course I said yes, and that opened the gate to possibilities for gaining professional experience in the world of marine conservation. Working with that team of researchers provided the opportunity to widen my skills and expand my research interests to new subjects, including fisheries management and policy, which I found extremely valuable for my professional career. That position also gave me the freedom to apply for summer internships, which aided me in developing a larger toolbox of skills. By the end of the grant, I was ready to make the jump overseas and, once again, by simply navigating the web and sending an introductory email describing my expertise

and research interests to the right person at the right time, I found the professor who would become my PhD advisor at ECU.

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

Following the Knauss Fellowship, I was hired as a contractor at ERT Inc. to work at the NOAA Restoration Center in the Office of Habitat Conservation at NMFS headquarters. This job supported the development of restoration options for addressing the injuries to marine mammals and fishes caused by the BP Deepwater Horizon oil spill in the Gulf of Mexico. This position gave me an incredible opportunity to work on an extremely sensitive management issue at the national level, and to gain further experience in the coordination and management of people.

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

I am currently the Marine Restoration Specialist at Ocean Conservancy's Gulf Restoration Program. A friend of mine sent me the link for the job application, as he thought I would be a perfect fit for that position. I was intrigued by the opportunity to return to the nonprofit sector while continuing to work on marine restoration of the Deepwater Horizon oil spill. I read the job ad, and I thought, "This is me they are looking for!" I applied and, luckily enough, they thought the same and hired me. And now I work to ensure that planning, projects, and initiatives for restoring the Gulf of Mexico marine and coastal resources injured by the Deepwater Horizon oil spill are guided by science, and that they include the marine environment as part of a broader restoration effort. An important component of my day-to-day job is to engage more directly with scientists and experts to create effective partnerships that can help to advance restoration efforts for marine resources in the Gulf.

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

My scientific background in marine and coastal ecosystems is essential to conducting my job effectively. The Gulf of Mexico is a complex ecosystem, with peculiar oceanographic features and a largely interlinked trophic web of coastal and marine species and habitats. My engagement with marine science and oceanography experts would be less effective if my scientific background were not as extensive. My education and training also provided me with critical thinking skill that is fundamental in identifying and engaging the key experts and stakeholders and in developing and implementing large restoration projects.

Is there any course or other training you would have liked to have had as part of your graduate education to meet the demands of the job market?

I would always students to take courses or training in economics and budget aspects of natural resources. These skills come in handy when writing project proposals and applying for grants. As a research scientist, I had to learn the hard way how to develop comprehensive budgets, strategic plans, and effective timelines. During my graduate career, taking more than one class in coastal and marine resource economics would have been really helpful to be more competitive in the current job market. Also, effective data analysis and synthesis is one of the major skills that employers seek. Therefore, I would strongly encourage students to take courses in computer programming for data analysis and to learn to use as many statistical methodologies and analytical techniques as possible. Similarly, being proficient in R and other similar programming languages would be really beneficial when applying for jobs, even outside of academia.

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

I find my job extremely satisfying. The aspect that I like the most is the direct engagement with multiple stakeholders, from scientists to fishermen. This gives me the opportunity to meet many people with different perspectives on the same issue. It is most instructive and rewarding to discuss an idea with experts driven by different passions and try to find the commonality that can help that idea to become a valuable project for all parties engaged in the process. The aspect of my job that I like the least is that sometimes developing an effective partnership requires compromising the original intent. However, the compromise is not necessarily a disadvantage if more people with different interests and backgrounds are then enticed to engage in the discussion and participate in innovative and effective solutions.

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

My main recommendation is to follow your passion, but at the same time not allow your passion to blind you when looking for jobs. My primary scientific passion has always been sharks, but I've never seen a position description for a "shark researcher" or a "shark scientist." As a student, it is important to understand that the species you are interested in should only be the vehicle to advance scientific research and understanding, while the scientific question behind the project has to be the main driver. Most, if not all, of my most rewarding experiences as a scientist have not been related to my shark studies but rather have dealt with fishery management in general. It is important to think outside the box and get out of your comfort zone. The scientific world is becoming evermore multidisciplinary. The job market is no longer looking for scientists with a specific expertise but instead for researchers with a breadth of skills who can navigate effectively across disciplines, from biology to social science. Students should put as much effort as they can into navigating multiple disciplines. In my experience, the key is to keep being passionate about what you do, but also to be open-minded and maintain a genuine curiosity.