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# CAREER PROFILES Options and Insights

EDUARDO LOOS | Project Manager, ASL Environmental Sciences (eloos@aslenv.com)

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

I earned a bachelor of science degree in oceanography from the Universidade do Estado do Rio de Janeiro in Brazil in 1997. Then, in 2002 and 2009, I completed master of science in remote sensing and PhD in optical oceanography degrees at the University of Victoria in British Columbia, Canada. My BSc Honours monograph examined the effects of ocean circulation on shark distribution patterns along the Brazilian coast. For my MSc research, I developed methods to accurately extract shoreline features from spaceborne (satellite) remotely sensed imagery. My PhD work described the apparent and inherent optical properties of the waters of the Strait of Georgia in British Columbia.

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

Throughout my graduate years, I taught the lab component of various disciplines in the University of Victoria (UVic) Department of Geography. Toward the end of my PhD, I started teaching regular second-, third-, and fourth-year disciplines, including statistics, remote sensing, ocean optics, field studies, and GIS. I continued teaching at UVic for the next four years. During that time, I also worked at the Institute of Ocean Sciences in Sidney, BC, as a postdoc, conducting photochemical experiments using ocean water and algal cultures in order to better understand CO<sub>2</sub> production.

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

During my time at UVic, I made many contacts and was able to find a job closely related to my field of study. The best advice I have is to develop as large a network of professional connections as possible and to keep it up to date. I have used

job search engines in the past but in the case of government or even academia, by the time the posting is made public, in most cases employers already have someone in mind for that position. Recently, I have noticed that LinkedIn has become a great networking tool that is also used by employers to look at individuals' past experiences. It also has a very effective job search component.

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

After completing my BSc, I worked as an image analyst at Thretek in Rio de Janeiro, Brazil. I was an image analyst in a small team that produced cartographic maps by interpreting of spaceborne radar imagery. This experience both gave me a solid background in remote-sensing applications and came in handy while I was applying for graduate school positions all over the world. Between my MSc and PhD, I spent one year in the Department of Biology at UVic developing watershed models integrated with GIS and remote-sensing techniques, while also teaching undergraduate classes in the Department of Geography.

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

I am currently a project manager at ASL Environmental Sciences, where I started as a remote-sensing and oceanographic scientist. My job has evolved over the years to managing proposals and projects and helping with business development. I have managed projects for the Canadian Space Agency (e.g., identification of oil spills from space, integration of optical and radar data to improve land cover classification), Fisheries and Oceans Canada (e.g., kelp mapping from space), and the Government



of Greenland (e.g., developing an online geoportal for sea ice and metocean data). A combination of online job searching and professional contacts led to finding my current position and learning more about the company.

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

A foundation in oceanography provides a solid scientific background in physics, chemistry, biology, and geology. While working on my PhD, I realized how important that foundation was to help me understand how light interacts with ocean waters. Optical oceanography draws concepts from all the other four "oceanographies." Ultimately, their integration is vital to interpreting data obtained remotely by optical and radar sensors orbiting Earth hundreds of kilometers above sea level. This multidisciplinary aspect of oceanography has allowed me to apply these scientific concepts to terrestrial problems, such as land cover/land use classification and optical hyperspectral analysis of targets.

## 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?

Faculty positions are becoming harder to attain. After many attempts and hours

spent applying for academic positions unsuccessfully, I was fortunate enough to find employment in the private sector. The demands and expectations of the consulting world are very different from academia. The pace is faster, timelines are shorter, and deliverables are evaluated differently.

My current position requires an understanding of project management different from the one used in academia. Adapting to this new world required learning a whole new body of knowledge. I consequently became a Project Management Professional (PMP) certified by the Project Management Institute (another degree, hopefully the last!). The current reality that most PhDs are not going to find employment in academia will force them to join the workforce elsewhere (the “real” world!), so I think that some knowledge of project management could be beneficial.

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

My position has taken me in directions I did not anticipate. The project management aspect has been a huge learning experience and has grown my skill set tremendously. I enjoy the variety of the work and find satisfaction applying my academic knowledge to real-world problems. Every day is a challenge, even more so in the current state of events, with oil prices at their lowest in years, changing environmental regulations, and increased competition from other consulting companies and universities.

Because of the business development aspect of the job, I routinely attend scientific conferences and trade shows all over the world to showcase our products, services, and projects. I contact past clients on a regular basis and try to establish new relationships via phone calls and email.

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

Network. Everyone you know has the potential to help you. Communicate your professional goals and expectations to them. As a panelist at a recent university career day, I suggested that the attending undergrads create LinkedIn profiles and keep their personal and professional social media presences separate. You want to highlight your professional accomplishments and avoid having a recruiter find compromising photos or posts about you.

Invest in learning foreign languages. I was fortunate to learn four foreign languages from an early age, but it is never too late! Being able to communicate in another language gives you the ability to understand the nuances of different cultures, peers perceive you in a different light, and you will automatically have a competitive edge over others.

## **CECILE S. ROUSSEAU | Research Scientist, Goddard Earth Sciences Technology and Research (GESTAR), Universities Space Research Association Global Modeling and Assimilation Office, NASA Goddard Space Flight Center, [cecile.s.rousseau@nasa.gov](mailto:cecile.s.rousseau@nasa.gov)**

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

In 2005, I earned my bachelor’s and master’s degrees in biological sciences from the University of Namur in Belgium. As part of the master’s degree, I had the opportunity to work at the Commonwealth Scientific and Industrial Research Organisation (CSIRO) in Tasmania, Australia, on the mechanisms driving harmful algal blooms in estuaries. This experience sparked an interest in pursuing research on phytoplankton, its variability, and its impacts. When I returned to Belgium, I undertook a master’s degree in oceanography at the University of Liège. Then, in 2007, I moved back to Australia to start a PhD in oceanography at the University of Western Australia. My dissertation research focused on the physical and

biogeochemical conditions around the Ningaloo Reef off Western Australia and the transport of dissolved and particulate matter to this reef.

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

Toward the end of my PhD, I applied for a postdoctoral position at the NASA Goddard Space Flight Center in Greenbelt, Maryland. I was accepted as a postdoctoral researcher under the Goddard Earth Sciences Technology and Research (GESTAR) cooperative agreement to work on the effects of climate variability on phytoplankton communities.

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

As part of my PhD, I worked on some NASA data. One day I found some



interesting features in the South Pacific and contacted the team that worked on the model simulations. We started collaborating on a paper to highlight some of the findings of this project. I then applied for a postdoctoral position at NASA to pursue this research. After one year as a postdoctoral researcher, I was offered the position of research scientist and enthusiastically accepted!

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

Yes, this is the first permanent position I have had. I started here in 2011 as a postdoctoral researcher and in 2012 I switched to a research scientist position. While the focus of my research hasn't changed much, the number of projects have multiplied over the last five years.

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

As a research scientist working for Universities Space Research Association at the NASA Goddard Space Flight Center, I use satellite, numerical model, and in situ data to assess the effects of climate variability on ocean biogeochemistry. Some of the projects focus on specific parts of the world like the Arctic, but the majority of my work is at a global scale. Since late 2015, I have also become a deputy manager, which means that I get to have a taste of what being a manager involves and decide whether this is something I would like to pursue in the future. I am also Principal Investigator on the Plankton, Aerosol, Cloud, ocean Ecosystem (PACE) mission, a satellite ocean color mission planned to launch in ~2022–2023. Being part of the science team so early on has been a rich learning experience so far. It's amazing the number of factors that need to be considered when developing a mission concept and making decisions that range from launch vehicle design to specifications for onboard instruments.

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

My oceanographic education, as well as the work I did during my PhD, was very much focused on data collected in the field. It was only toward the end of my PhD work that I started looking into satellite and numerical data. The field experience I had really taught me the many challenges that field sampling represent. I have a very deep appreciation for in situ data

sets used in the validation and parameterization of models and satellite data. I now use an interdisciplinary approach to my research by combining satellite, numerical, and in situ data to make the best use of each of these sources for climate research. The international experience that I acquired during my academic career also taught me how the various systems work around the world. Switching from academia to industry and now government-oriented work allowed me to see the advantages and disadvantages of the different systems and countries.

**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 think the best training comes from the people you meet along the way, including advisors and mentors. I was very lucky to have some very good advisors and mentors. The best training sometimes comes from experiences, including failures. As hard as it can be to have a project that fails or a paper/proposal rejected, you learn a lot from these experiences. If you have mentors around you that can support you and guide you through the systems, it makes the whole experience a lot more enjoyable.

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

The research I do here is extremely gratifying, I work among experts in various areas of modeling and satellite research. The diversity of projects that we get to work on means there is never a boring day! While I do enjoy writing proposals, it can sometimes feel like a lot of time is spent on writing without knowing whether the project will get funded. However, there are benefits to be gained from thinking about a new project, posing research questions, and determining how to answer them.

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

Be very open-minded about potential jobs and places to work. If you can, go to conferences, and if you particularly enjoy someone's talk, go and speak with them. They may have some funding, or know of some colleagues looking for postdocs or who have other positions available. If not, most of them will be very keen on giving you advice or names of people who may be interested in the research you want to do. Don't hesitate to contact people by email. Make sure you explain to them the type of research you are looking to do and how you see yourself fitting into their current research.

# CALL FOR CAREER PROFILES

## Who would you profile?

*Oceanography's "career profiles" of marine scientists are intended to provide information to 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 phone's contacts folder and provide Oceanography with information about people you know whose career paths might inspire and inform the next generation. Self-nominations are accepted.*

## Do you have suggestions?

Please send their contact information to [ekappel@geo-prose.com](mailto:ekappel@geo-prose.com).

