

THE OFFICIAL MAGAZINE OF THE OCEANOGRAPHY SOCIETY

Oceanography

CITATION

Career profiles—Options and insights. 2010. *Oceanography* 23(3):184–188.

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**SHARON E.R. FRANKS | Director, Research Proposal Development Service,
University of California, San Diego, sfranks@ucsd.edu**

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

I completed my PhD in oceanography at Oregon State University in 1992. I studied the transport and settling of particles in the deep-sea hydrothermal plume above Endeavour Ridge, the northern end of the Juan de Fuca Ridge, about 250 km southwest of Vancouver Island. I used moored sediment traps, current meters, and transmissometers that we deployed and recovered from Canadian research vessels.

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

I stayed in academia, but neither in research nor teaching. Within two weeks of defending my thesis, I moved from Corvallis, Oregon, to San Diego where my husband, Peter, began a faculty position at Scripps Institution of Oceanography. Eager to try my hand at work that would allow me to share my passion for science with nonscientists, I set about finding a job that involved public outreach.

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

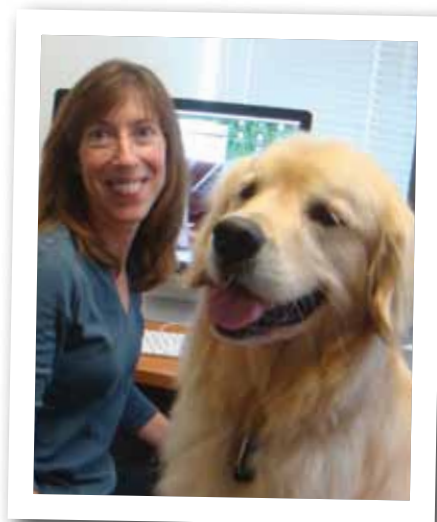
I was able to find work within the university—UC San Diego—through networking and good fortune. A senior professor at Scripps introduced me to colleagues who were working in informal science education and public outreach. These folks helped me get started on a nontraditional, postgraduate career path.

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

My first few jobs at Scripps involved working with the Institution's aquarium—designing outdoor, get-your-hands-wet educational programs for visitors, developing a curriculum on global change, and launching a program of volunteer-led tours of the Scripps campus. Later, I held positions with a climate research center at Scripps and California Sea Grant. Still later, when my daughter was a baby, I did some project-based writing for the Scripps Director. Then, for five years, with generous funding from NSF and an academic appointment at Scripps, I worked to facilitate the incorporation of education and public outreach activities in scientists' research proposals.

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

I'm the director of the Research Proposal Development Service at UC San Diego. My unit is part of the UC San Diego Office of Research Affairs and facilitates the development of large, interdisciplinary proposals, mostly to federal agencies. A few years ago, I was looking for a change in professional direction. I contacted the Vice Chancellor for Research who happened to need some help with a special project. I began working for him on a part-time basis and transitioned to full-time in my current position.



Sharon and Wally, her registered therapy dog who she takes to hospitals and other venues to help reduce patients' stress.

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

My education and career continue to provide opportunities for me to become a better thinker and communicator. Thinking critically and communicating in ways that are expected and respected in academia are essential skills in my work. Oceanography is inherently interdisciplinary. My doctoral thesis, for example, brought together concepts from physical, chemical, biological, and geological oceanography. Training in oceanography deepened my appreciation for and comfort with working at the intersections of fields, something I do regularly in my current job.

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

It's very satisfying to play an instrumental role in getting a \$10- or \$50-million proposal out the door after weeks, sometimes months of hard

work, especially when the PI says: “We couldn’t have done it without you.” Among the things I really love about my job are opportunities to explore new fields—recently, bioengineering, biofuels research, computer science, and research ethics. I get to work with highly accomplished, ambitious faculty, researchers, staff, and administrators from all across campus. The feeling of being truly useful to and respected by the people I work with and my institution is terrific. It’s always cause for celebration when a

proposal we’ve worked on gets funded. We occasionally encounter an investigator who seems to be less invested in a proposal’s success than we are. The challenges that situation presents might be an aspect of the job I like least.

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

Be entrepreneurial. Find or create work rather than waiting patiently until you see an advertisement for a job that looks appealing. Reach out to and enlist

the help of personal and professional acquaintances who may connect you with others who are in a position to put you to work. Maintain a can-do attitude, even when you’re not sure how you’ll accomplish a particular set of tasks. If you made it through graduate school successfully, you’re likely pretty resourceful, so well equipped to take on new challenges. Prepare yourself for the inevitable twists and turns in your career path. 📧

KERRY A. HEGARTY | Managing Director/CEO, Sienna Cancer Diagnostics, Melbourne, Australia, khegarty@siennadiagnostics.com.au



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

I received my PhD in 1985 in marine geology and geophysics from Columbia University’s Lamont-Doherty Earth Observatory. I studied the origins of different types of plate boundaries, both convergent and divergent. It was fascinating to ask “why and when does deformation, fracture, and ultimately a convergent plate boundary occur?”

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

I don’t think I had expectations about any career direction (let alone academia) or even aspirations, except for the fact that I wanted to enjoy the process. For example, at UC Davis where I completed my BS degree in 1978, I enjoyed math and science, and the *application* of those tools. I knew more about what I DIDN’T want to do—I didn’t want to do a pure degree in physics or math, for example. Rather, I wanted to *apply* those tools. So, an offer to do further study as a graduate student at Lamont allowed me to build on those tools and extend them to the natural environment. For me, it was a perfect mix (I loved the outdoors) and an honor to have the opportunity. Furthermore, being funded for graduate work and being based in New York City seemed too good to be true. The next six years of education in life and

geology far exceeded my expectations. I believe it’s important as a young graduate student to achieve a considered balance between study, exercise, and growing new friendships that will be with you for the rest of your life.

After completing my PhD, an oil company job was the obvious pathway for someone with my background and interests (i.e., practical application of geophysical tools). Despite a number of offers in Houston where I could have shared some lovely times with some very good friends, I was, for some reason, attracted to a fascinating research group in Melbourne, Australia, where I was offered a research fellowship at Melbourne University (Geology Department). From memory, the salary (\$18,000/year) was about one-third of what the companies were offering. I was single at the time and looking for that magical combination of intellectual,

spiritual, and social challenge.

In 1987, after the two years as a Research Fellow in Melbourne, I thought maybe *now* I should go into an oil company, but decided instead to form a business providing services *to* the oil industry. Happily, I did indeed finally get to see my good friends in Houston on a regular basis as we sold services around the world.

We set up Geotrack International in 1987, based on novel fission track technology out of Melbourne University, and ultimately sold our laboratory-based services to all the major multinational and state oil companies around the globe. Starting your own business with an equally enthusiastic team is a wonderful opportunity, albeit risky. I have always been grateful to have met the people and the technology that allowed us to create a whole new market need in the international exploration sector. On reflection, I now see these scary risk-taking decisions as part of my DNA. I am fortunate that, in most cases, these decisions points have led to immense fulfillment and personal growth. Fifteen years later when the business was doing well, traveling around the globe was no longer a buzz, and my two children were young, so my eye started wandering, with a view to the next adventure. As always, I was fortunate that my husband Glenn Duddy was tireless in his support of my pursuits and my questions about what life was meant to bring.

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

At about 47 years of age, this soul searching led to an offer to serve as Managing Director/CEO of Sienna Cancer Diagnostics in Melbourne,

which I took up in late 2004. Sienna is a publicly owned biotech company, specializing in novel ways to detect cancer using noninvasive means (the PSA test for men is an example of such a test).

I had searched systematically for a role that fit the nexus of high technology, business, and community. I spoke to a lot of people, using and growing my network, trying to figure out what I wanted in my next career. I treated the exercise as a homework assignment, and had confidence (sometimes wavering) that I would succeed in finding something. I had come from a global high-technology marketing experience, so I thought I could extend that skill set to a community-based focus. Cancer seemed to fit the criteria, and technology challenges in the biotech space naturally appealed.

While the shift from oil and gas exploration to developing novel cancer diagnostic tests may seem fanciful, there are meaningful common denominators that not only facilitated the transition but also added value in my new setting. Knowing how to work with academics, identifying commercial opportunities, ensuring a vision of global application, and working with top people are key elements to any project or company, regardless of the sector.

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

It is difficult for me to separate the superb academic education received at Lamont from the personal growth that necessarily occurred in parallel. A young immature girl (22 years old, from Pasadena, California) leaves Lamont six

years later with more far more than a PhD. Without question, the education that I received has been a platform for other, seemingly unrelated, achievements that followed. My education gave me confidence, an understanding of hard work, enduring friendships, and appreciation of strong leadership. While the discussions these days around my office are about titration curves (showing responses to certain biomarkers), I can still contribute dangerously to strategic discussions about error analysis, trends, and next experimental steps. The detail and rigor that Lamont students are expected to follow in specific projects provides a foundation that allows you to come in at a higher level in later years and assess the strategic value of a piece of technical work. If you don't have that educational foundation, it will be hard to do anything else but pretend to add value in those settings.

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


Very satisfying because it is very challenging. What I like best is the teamwork. When we work hard and succeed on even a small challenge, it is enormously satisfying to see the joy it brings to the people around me and ultimately to value to shareholders.

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

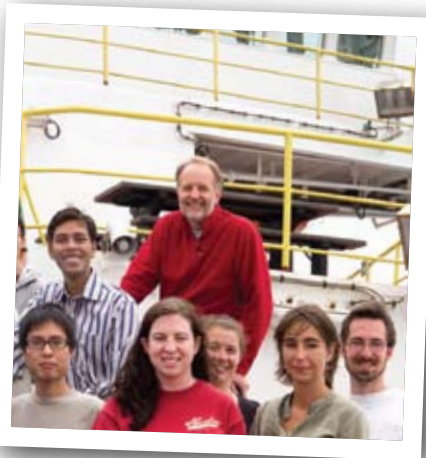
Be careful what you hope for, and let serendipity play its role. More specifically, try your best to enjoy every aspect of your graduate training, and that includes study, developing your network, and trying things outside those activities directly required for your degree. The more activities you try, the more clarity

you will have in identifying what you may like to in the future. Do the best you can in your job and be mindful that it

may be only one of five to six transitions that you will make in your life. There are no rules—no more gold watches.

Let your friendships and your health be the common denominator that gives meaning to those transitions. 

ALBERTO MALINVERNO | Lamont-Doherty Earth Observatory of Columbia University, Borehole Research Group, alberto@ldeo.columbia.edu



Alberto (top row) on board the drillship *JOIDES Resolution* during IODP Expedition 321 in 2009.

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

In 1981, I completed a “Laurea” in Geological Sciences at the University of Milano, Italy, with a thesis on the interpretation of seismic reflection profiles in the Tyrrhenian Sea. I then earned a PhD in geology in 1989 from the Lamont-Doherty Earth Observatory of Columbia University. My dissertation concerned the topographic roughness of mid-ocean ridge flanks, and the application of statistical analyses to high-resolution sonar profiles of the seafloor. As a student, I went to sea on 10 marine geology expeditions, where we took samples by coring and dredging, and also collected a variety of measurements and imagery: gravity, magnetics, seismic reflection, deep-tow photography, and side-scan sonar.

Experience at sea got me hooked on marine geology, connected the abstractions I learned in school to the real world, and was a key part of my education.

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

After obtaining my PhD, I continued to do research at Lamont for another three years. I was happy to continue the work on seafloor morphology that I started as a student, but after a while I wanted to change and try some other research direction.

How did you go about searching for a job outside of the university setting? Is this the only job (post-academia) that you’ve had? If not, what else did you do?

I did not actively search for a job outside academia, but was invited to spend a year as a visiting scientist at Schlumberger-Doll Research in Ridgefield, Connecticut. I then accepted a position to do research on using downhole measurements to build three-dimensional computer models of hydrocarbon reservoirs. I found Schlumberger-Doll Research a lively environment, where researchers were encouraged to find their own directions. I was able to develop a new line

of research in geophysical inversion, and headed a small group that studied methods to quantify how downhole geophysical measurements reduce the uncertainty of subsurface models. I stayed in industrial research with Schlumberger for 13 years.

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

Although I enjoyed my time in industry, I was ready for another change, and in 2005 I returned to academia at the Lamont Borehole Research Group, the downhole logging contractor on *JOIDES Resolution*, the US drillship of the Integrated Ocean Drilling Program. I was able to apply what I learned about downhole measurements and start a new research line on methane hydrates, combining observations from cores and downhole logs with physical models of hydrate formation. At Lamont, I also supervise a small group of logging scientists that help with downhole measurements in the IODP expeditions on *JOIDES Resolution*.

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

For me, the most satisfying part of the job has always been to find out something about how Earth works. I feel very

fortunate that the jobs I have had offered that opportunity. The least favorite parts are dealing with the bureaucracy (large companies and universities are not very different there!), but it is certainly a price worth paying.

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

I had a rather tortuous career path with two transitions between industry and academia. I have been lucky to find interesting problems wherever I worked, however, and encourage new graduates to keep a broad perspective and consider positions in both industry and academia. In the academic world we sometimes underestimate the intellectual challenge posed by industry problems, but in my experience it was equally satisfying to work on applied or pure research puzzles. The key was to have enough freedom to find my own way to contribute.

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

I feel very fortunate that I had a broad education, starting with geology in Milano and continuing with geophysics and applied mathematics at Columbia. That diversity has helped me immensely in dealing with a variety of research problems. My experience at sea has also been a great lesson in how to work with others and how to make do when time and resources are limited. 📷

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OCEAN ENGINEERING AND INSTRUMENTATION

The Link Foundation will award several \$25,000 predoctoral research fellowships per year to doctoral candidates enrolled in academic institutions in either the United States or Canada.

The application, in the form of a research proposal, must be received by January 17, 2011.



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