THE OFFICIAL MAGAZINE OF THE OCEANOGRAPHY SOCIETY

Oceanography

CITATION

Career profiles—Options and insights. 2011. *Oceanography* 24(1):186–189.

CAREER PROFILES Options and Insights

DANIEL KILFOYLE | Science Applications International Corporation, daniel.b.kilfoyle@saic.com

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

I received my bachelor's and master's degrees from MIT in aeronautical and astronautical engineering in 1986 and 1988, respectively. As I was supported by a full Air Force ROTC scholarship, no job hunting was necessary after finishing school—I immediately entered the Air Force officer corps. After only two years, I had an opportunity to leave the service and work for private industry, where I took advantage of my company's supportive continuing education program. While continuing to work, I pursued and obtained a master's degree from the University of California, San Diego, in electrical engineering. After moving back to Massachusetts, but continuing to work for the same company, my proximity to the Woods Hole Oceanographic Institution, along with a desire to advance professionally, allowed me to drop back to part-time work status and pursue a PhD in electrical and ocean engineering from the Massachusetts Institute of Technology/Woods Hole Oceanographic Institution Joint Program. I received my doctorate in June 2000.

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

I actually never had an interest in academia except for advancing my education. I fully intended to work either in the government or private sector as an engineer. In fact, I worked before, during, and after my doctoral work for Science Applications International Corporation (SAIC). My decisions to pursue a second master's degree and, eventually, a doctoral degree were not premeditated. Neither decision felt necessary for my job or financial well-being. Each was undertaken as an avenue toward personal satisfaction as I realized I could achieve them without serious disruption to my professional career.

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

After receiving my MIT master's degree and fulfilling the ROTC obligation, I began a classic job search by reading newspaper ads in the Southern California area. My job at SAIC began in June 1990 as a result of answering a newspaper ad and interviewing with an MIT alumnus. In retrospect, I was extremely fortunate to begin such a satisfying career with such a simplistic approach to job hunting.

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

Aside from my brief tenure with the Air Force, my employment with SAIC has been continuous, although I did revert to part-time status for several years as I was finishing my doctoral thesis.

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

The common university connection with the MIT alumnus during my SAIC interview was critical for establishing

his confidence that I could do what the job demanded. Since then, I have spent the last 20 years as a signal processor and modeler of electromagnetic and underwater acoustic phenomena. While my work has primarily been for the US government, there have been brief commercialization forays. Some example projects include high-capacity underwater acoustic communications (the topic of my Joint Program doctoral thesis), development of foliage penetrating radars, geolocation of wireless transmitters in urban environments, and innovative satellite communication architectures. My Joint Program years were in the midst of this career. As my research was closely related to my professional work, I continue to work with colleagues at WHOI and elsewhere while living in Falmouth, MA.

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

My training and research in the field of communication through the challenging underwater acoustic environment was both directly relevant to

continued private sector contracts with the US government and indirectly invaluable as a firm foundation in the overall field of signal processing. My relationship with advisors and other professors formed the basis for professional collaborations after graduation, including having them consult on my programs. Relationships that academics have with private industry are an invaluable tool for an imminently graduating student to exploit. Employers trust these consultants' advice about who to hire.

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

As my 20-year affiliation with SAIC suggests, I have found the diverse and challenging projects that I win, lead, and execute satisfying and enjoyable. In particular, much of my work follows the model of conceiving an idea, evaluating it in simulation, and conducting feasibility experiments that lead to delivery of a product over a one- to two-year cycle. With two or three such projects ongoing at any time, the combination of diversity and accomplishment is professionally gratifying. I suspect this is in stark contrast to academic work that typically has longer time lines and seldom reaches clear conclusions. My academic and professional experience enables me to essentially define my own work.

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

The professors, scientific staff, and alumni contacts that you have as a result of your education are your absolute best resource for finding and winning a satisfying job. Do not hesitate to reach out to all of them. Often times, a job will be created for the right person who comes with the right recommendation.

AUDREY M. ROGERSON | Director of Development, The Arnold Arboretum of Harvard University, arogerson@arnarb.harvard.edu

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

I received my PhD in 1993 from Brown University in applied mathematics. As a graduate student, I was affiliated with the Center for Fluid Mechanics, Turbulence, and Computation—one of several centers within the Division of Applied Mathematics. My thesis was a mathematical and computational investigation of a nonlinear fluid flow that has relevance to oil reservoir engineering, groundwater hydrology, and thin-film manufacturing processes. I entered the field of oceanography upon accepting a postdoctoral fellowship at the Woods Hole Oceanographic Institution (WHOI).

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

Yes. After two years as a postdoc at WHOI, I joined the tenure-track faculty there in the Physical Oceanography Department. I was an Assistant Scientist at WHOI from 1995 to 1999. During that time, I did numerical modeling and theoretical work on oceanic and atmospheric flows, looking at problems of mixing, instability, and nonlinear wave phenomena.

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

When I decided to leave academia, I was very fortunate to have the opportunity to take some time off and contemplate what I wanted to do career-wise. At first, I thought I might join the corporate world—possibly as a management consultant or a financial quantitative analyst. However, after a few informal informational interviews, I quickly decided that wasn't what I wanted. After looking into ways that I might volunteer

my time during this "exploratory phase" of my life, I got the idea that I wanted to work for a philanthropy. After doing a bit of online research, I wanted to get some first-hand information, so I phoned someone that I knew had personal connections to some philanthropies—John Farrington, who at the time was

WHOI's Vice President for Academic Programs and Dean. John didn't hesitate to help connect me with some folks at a few foundations and was very helpful and encouraging overall. In addition to helping me make the connections I was asking for, John offered his own suggestion on my next career move—that I come back to WHOI to work in its fundraising office. This offer came as a complete surprise to me, and, frankly, the idea wasn't very appealing. I had an unfavorable view of fundraisers, based on a weak body of information, and I remember telling John that I didn't think it was the thing for me. But John asked me to follow up on his idea, and I did, out of respect for him, even though I really didn't think it had legs. However, not long afterward, I was recruited back to WHOI to work as a fundraiser.

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

I worked with WHOI's fundraising team for eight years. At first, I was hired to work with individual donors. But after one year's time, the position of Director of Foundation Relations was vacated, and I was appointed to that position. I felt that this was a good fit for me because the foundation fundraising effort at WHOI is largely focused on garnering support for specific sponsored research projects, for which my scientific background was helpful. I was in this position for seven years, and had the opportunity to work closely with a wide variety of scientists to secure support for instrumentation, postdoctoral positions, and research projects that spanned all of the subdisciplines of oceanography.

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

I am Director of Development for the Arnold Arboretum of Harvard University, where I lead a small fundraising team to support the Arboretum's programs in scientific research, horticulture, and education and outreach.

I came to my current position by happenstance as well. While I was working at WHOI, I received a call from a recruitment firm that was working on a search for Harvard's School of Engineering and Applied Sciences. They wanted a fundraiser with a PhD in a closely related science, and my background in mathematical physics and mechanical engineering attracted their attention. I wasn't thinking about making a move, but I agreed to look at the ad, as I usually do, and told the recruiter that I would pass it along to colleagues that might be a good fit. The job didn't really interest me, mostly because it was indeed so closely related to what I had studied as a graduate student. And, I was enjoying getting a broader exposure to science that my current job afforded me. However, the posting contained a link for "other jobs at Harvard," and I just casually clicked on it, not thinking too much about it. Attached was a listing for the Arnold Arboretum. Being an enthusiastic gardener, I clicked on the ad and subsequently on the Arboretum's Web pages, mostly out of sheer curiosity about the place, not because of the job opportunity per se. A few days later, however, I began to think about whether it was time for me to try something different. At WHOI, we were just completing a campaign, and the leadership team with which I had been working closely was transitioning out of WHOI; I began to wonder if I should make a transition as well. The idea of working with botanists and horticulturists interested me, and so I ended up making the move "from the sea to land."

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

Having been a researcher is a great advantage to my work as a fundraiser. Generally speaking, it's important to have good research skills in order to (1) quickly comprehend new subjects and understand the purpose and potential impact of a project, (2) learn who else is engaged in similar activities and identify the strengths of those "competitors," and (3) identify possible synergies and partnerships that could enhance the organization's efforts. In short, fundraisers need to quickly get the gist of an issue or project, and understand the arena within which that project lies.

Although I have raised money for a lot of different research projects, none of them have been within my (previous) area of scientific expertise; having expert knowledge of a subject is not critical to being an effective fundraiser. However, my experience as a scientist greatly facilitates my ability to work effectively with other scientists simply because I have a good sense of how scientists go about their work, how they formulate and refine their ideas, and how they communicate with each other. That understanding has enabled me to get the gist of many complex scientific problems that are well outside of my own educational background and research experience.

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

Being a fundraiser at an organization that you care about—one with a mission that is aligned with your own interests—is intellectually stimulating and professionally satisfying. You have the opportunity to work closely with a wide variety of people within the organization, and, as a result, you gain a broad and diverse perspective on the organization and on the field/arena within which the organization operates. As a fundraiser, you also meet some wonderful philanthropists who are truly inspiring in their dedication and commitment to a variety of causes, which opens your eyes to the role that philanthropy plays in society. And, of course, it's gratifying when you can help advance the organization's mission by raising support for an important initiative. Fundraising is a highly collaborative effort, and that is what makes it interesting as well as challenging. Fundraising is no fun when collaborations are ineffective and/or folks cannot get on (or stay on) the same page.

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

If you're still trying to figure out what you want to do, talk to people about your search—anyone whose opinion you value—and be open-minded. They might share something with you that you haven't yet thought about. Realize that it takes a lot of people to help make the world go 'round. Academia is great, and there are many jobs within academia that enable the work of academic researchers to proceed and be shared; and, of course, there is a big world outside of academia. Don't pigeonhole yourself. Think about what truly floats your boat, talk to people to better understand what opportunities exist, and don't expect to go from point A to point B in one shot. Be flexible and take a few chances!

UPCOMING *Oceanography* ISSUES

REGULAR ISSUE FEATURES

The editorial staff encourages unsolicited manuscripts on other oceanography themes for consideration and publication under the Regular Features banner.

SPECIAL ISSUES

Sea Level
Vol. 24, No. 2, June 2011
Guest Editors:
- Laury Miller, National Oceanic and Atmospheric Administration
- Greg Mountain, Rutgers University
- Josh Willis, Jet Propulsion Laboratory

Arctic Oceanography
Vol. 24, No. 3, September 2011
Guest Editors:
- Kelly Falkner, National Science Foundation
- Joseph Ortiz, Kent State University
- Patricia Matrai, Bigelow Laboratory for Ocean Sciences
- Rebecca Woodgate, University of Washington

Oceanography of Taiwan
Vol. 24, No. 4, December 2011
Guest Editors:
- Terri Paluszkiewicz, Office of Naval Research
- Twengyung (David) Tang, National Taiwan University

RIDGE 2000
Vol. 25, No. 1, March 2012
Guest Editors:
- Dan Fornari, Woods Hole Oceanographic Institution
- Jim Holden, University of Massachusetts Amherst
- Lauren Mullineaux, Woods Hole Oceanographic Institution
- Maya Tolstoy, Lamont-Doherty Earth Observatory