

AC 2009-506: TAKING A BREAK FROM ACADEMIA

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Taking a Break from Academia

Abstract

This paper presents the input received from four faculty members who “took a break” from their regular academic life. The panelists responded to the following questions:

- Where were you in your academic career when you decided to take a break?
- What were the factors that motivated you to pursue this activity?
- What exactly did you do?
- How did you find out about options available to you?
- What do you recommend to faculty considering these options to make sure that they make the most of their opportunity?

The information provided can be utilized to encourage and support faculty members to expand their perspective and take advantage of the numerous opportunities available. These opportunities can enhance both teaching and research capabilities as well as provide a mechanism for enlarging an individual’s world view.

Introduction

This paper presents the input received from 4 faculty members who took a break from the academic life. The pane is moderated by Bevlee A. Watford. The four panelists are

- Lesia Crumpton-Young, NSF Program Officer, University of Central Florida
- Noel Schulz, Sabbatical, Mississippi State University
- Leigh McCue, ASEE-ONR Summer Faculty Research Program, Virginia Tech
- Sue Davidson, Fulbright Fellow, University of Pennsylvania

Lesia Crumpton-Young is a full professor at the University of Central Florida. She earned her BS, MS and PhD degrees in Industrial Engineering from Texas A&M University, College Station. Her research interests include human performance modeling, industrial ergonomics and ergonomic designs for special populations. From August 2007 to August 2009, Dr. Crumpton-Young was a program manager in the Division of Undergraduate Education at the National Science Foundation.

Noel Schulz is a professor of electrical engineering at Mississippi State University and holds the TVA Endowed Professorship of Power Systems Engineering. She earned her BS and MS degrees from Virginia Tech and her PhD from the University of Minnesota. Her research interests involve the application of computers, including intelligent systems, to solve problems in power systems operations. In fall 2008, Dr. Schulz spent a sabbatical in Wales.

Leigh McCue is an assistant professor in the department of aerospace and ocean engineering at Virginia Tech. She earned a BS degree in mechanical and aerospace engineering from

Princeton, an MS degrees from the University of Michigan in mechanical engineering and another MS as well as PhD in Naval Architecture and Marine Engineering) also from the University of Michigan. Her research interests include dynamic deck motion limits, statistical approaches to dynamical analysis and non-linear and chaotic vessel dynamics. For the past several summers, D. McCue has held an ASEE ONR summer research position at the Carderock Division of NAVSEA Warfare Center.

Sue Davidson is the Weiss Professor of Computer and Information Science at the University of Pennsylvania. She is also the founding co-director of the Center for Bioinformatics. She earned a BA in mathematics from Cornell University, and an MS and PHD in Computer Science from Princeton University. Her research interests are in the field of databases and bioinformatics. From January to June in 2004 she was a Fulbright Scholar.

Where were you in your academic career when you decided to take a break?

MCCUE: I participated in the ONR-ASEE Summer Faculty Research Program during the first two summers of my academic career.

DAVIDSON: I was a full professor when I decided to take a break from being a Professor of Computer Science at the University of Pennsylvania as a Fulbright scholar visiting a premier research lab, INRIA-Orsay, located in the suburbs of Paris. More to the point, both my children had left the home and were in college. My husband's career was at a point where he could not come with me, but he was willing for me to take a six month sabbatical without him so that I could refresh myself.

CRUMPTON-YOUNG: I had completed a term as Department Chair of Industrial Engineering and Management Systems at the University of Central Florida. I was serving as the co-director of the NSF I/UCRC in e-Design and the Director of the Center for Engineering Leadership and Learning.

SCHULZ: I was serving as the TVA Endowed Professor at MS State. I had just submitted my dossier for promotion to full professor. I saw a sabbatical as an excellent opportunity for me to re-evaluate my professional and personal goals around my career. Sabbatical is one of the under-utilized professional development opportunities that can be use in academic settings. According to Wikipedia, sabbatical comes from the word, "Sabbath" and relates to a rest from work. Many universities allow faculty to apply for a sabbatical every seven years.

What were the factors that motivated you to pursue this activity?

MCCUE: My primary motivations were to broaden my research capabilities, build collaborations, and familiarize myself with the Navy's research needs. I knew that working at the Naval Surface Warfare Center, Carderock would provide the opportunity to meet leading scientists in my field and observe/use test data from some of the best facilities in the world.

DAVIDSON: Who doesn't want to live in Paris? More seriously....

First, I had been director of a center for about four years and needed a break. The center was also at a point where a change in leadership was helpful for its growth. However, unless you are physically not around there is little incentive for others to step in and take over. So I really needed to go away from Penn.

Second, I had been at Penn for over 20 years and had only taken one (1year) sabbatical during which I stayed at Penn and learned some biology so I could transition into bioinformatics. I needed to have a different perspective on life in general, and my research in particular. I also needed a break from teaching!

Third, I had lived and gone to school in Paris when I was about 13 or 14 and had loved it. I had always wanted to go back for an extended stay.

Fourth, my mother had died a year earlier and I had realized that life is short; going to Paris was on my bucket list. (My father had died 15 years earlier.) Fifth, I had a large friend and colleague "support group". On the professional front, one good friend was the director of a premier research lab and was happy to have me visit. A second good friend of mine (an Israeli) was visiting his lab during that period, and we really enjoy working together. A third good friend of mine had an apartment in Paris and wasn't going to be there during the time that I was, so the housing angle was taken care of.

On the family front, I had one cousin who lived just outside of Paris and another who lived in Burgundy (near Chablis). I also have an aunt and uncle who live in England (near Oxford), and was able to visit them periodically.

CRUMPTON-YOUNG: I have always been interested in serving as a Program Director at NSF but couldn't find the right point in my career to do so. After serving as Department Chair and given that my children were older and my husband was supportive of me pursuing this opportunity; it seemed like an ideal time.

SCHULZ: The first question you have to ask yourself is why do you think you need a sabbatical? What types of things would help you recharge and regain perspective? Do you want to work in a new research area and learn new skills? Do you want to write a book? Do you want to visit several universities and learn about advanced pedagogical trends? Do you want to spend time in industry to help with classroom and research activities? The answer to some of these questions will be essential for planning your sabbatical.

There are lots of questions to ask and answer relating to a sabbatical:

- What time is best for my work and my family?
- One semester, two semesters or an entire year?
- Corporate sabbatical, another US university(ies) or international experience?

What exactly did you do?

MCCUE: I was a summer faculty researcher in the Seakeeping Division of the Naval Surface Warfare Center, Carderock Division (NSWC-CD). During my first summer, in collaboration

with William Belknap and Bradley Campbell, both of the Seakeeping Division of the Hydromechanics Department, I applied qualitative and quantitative approaches in an effort to validate numerical nonlinear seakeeping codes. Simulated results were compared to experimental data acquired by NSWC-CD engineers in the Maneuvering and Seakeeping Basin (MASK) at the NSWC-CD. The study then discussed the use of analytical methods to quantitatively validate a numerical simulation to experimental results. Additionally, and largely in follow on to my PhD research, I studied the use of finite-time Lyapunov exponents (FTLE) for the detection of large amplitude roll motions and capsizes. The effectiveness of the FTLE technique was qualitatively compared to a scalar ship motion metric based upon the 'energy index (EI)' concept used for real-time identification of quiescence.

In my second summer, again in collaboration with William Belknap and Bradley Campbell, I studied the sensitivity of tumblehome vessels to parametric resonance. The ONR 3 Topsides hulls were used to compare the single degree-of-freedom rolling response of a destroyer-sized vessel with flare (model 5613), tumblehome (model 5613-1), and wallsided (model 5613-2) shapes above the waterline. Through this relative comparison, key aspects of parametric resonance of a tumblehome hullform were highlighted. Additionally, Bradley Campbell and I conducted a study on the feasibility of approximating equations of motion for experimental roll time series data via 'guessing' a form of the equations of motion and optimizing unknown coefficient values. Publications arose from both summers' work.

DAVIDSON: On the professional front, I worked at the research institute INRIA at Orsay (just outside of Paris). My hosts were Serge Abiteboul and Christine Froidevaux at the University of Paris-Sud. Serge Abiteboul is a world expert in database and web-technologies, and Christine Froidevaux is an expert in ontologies and query mediation. She is also part of a multidisciplinary research and teaching group involving computer scientists, mathematicians and biologists at the Institute of Genetics and Microbiology (IGM) and the Institute of Plant Biotechnology (IBP) at the University of Paris-Sud. During this visit, I helped forge a connection to bioinformatics at INRIA. A fantastic outcome of this visit was that I worked with a Ph.D. student, Sarah Cohen-Boulakia, who later came to Penn to do a postdoc with me for 18 months together with her husband, Olivier Biton, who worked as my programmer. It was a terrific career boost for both of us, and I still maintain a very close relationship with them (and their daughter, who was born while they were here). Another great outcome is that my colleague Tova Milo, who was visiting INRIA at the same time that I was, sent her Ph.D. student to me to do a postdoc and will be coming to visit this summer to continue some of the research we started.

On the personal front, I spent a lot of time improving my French and learning more about the culture. A lot of this was done by reconnecting with my cousins, who have lived in France for about 20 years. I had been very close to them as a child but had lost touch with them over the years, and I really enjoyed getting to know them and their families again.

CRUMPTON-YOUNG: I was very fortunate to have this opportunity present itself at the right time. I didn't do much, in fact, my name was mentioned by a good colleague as a possible candidate to the Program Director at NSF who contacted me and discussed the opportunity. I decided to apply for the position and later interviewed and was offered the job.

SCHULZ: I was on sabbatical at Cardiff University for the fall semester 2008 working with Professor Manu Haddad in the High Voltage Energy Systems Research Group, Cardiff School of Engineering. The EPSRC Visiting Researcher program allows “support for engineers of acknowledged standing, either from within the UK or abroad,” to visit a UK organization. Funds from the grant included research funds for equipment and resources for Dr. Schulz’s project at Cardiff, travel funds for visiting other UK universities and organizations and living expenses during her stay at Cardiff University.

My activities during my stay in the UK were related to three main objectives. The first objective related to participation in several ongoing research projects at Cardiff. Cardiff University was recently awarded £3.8M from the UK EPSRC to set up the Centre for Integrated Renewable Energy Generation and Supply (CIREGS).

The second objective was to visit with researchers within the School of Engineering at Cardiff to identify synergies between MSU and Cardiff University. The Cardiff School of Engineering and the MSU Bagley College of Engineering signed a Memorandum of Understanding (MoU) in 2007 to work on research collaborations and faculty and student exchanges to promote activities at both institutions. As part of this effort, Professor Haddad and I are working on a proposal to be submitted to the National Science Foundation Partnerships in International Research and Education Scheme to initiate and set up a formal program between Cardiff and MSU.

The third objective was for me to explore activities within the UK and European Union related to power systems educational and research.

How did you find out about options available to you?

MCCUE: I learned about the program via e-mails from ASEE, ONR program officers, and gentle prodding by faculty in my department.

DAVIDSON: I knew about Fulbright fellowships because my father had one when I lived in France as a child. The connection to a lab in France was a personal relationship that I had forged through conferences combined with my love of the language and country.

CRUMPTON-YOUNG: The NSF Program Director of my CAREER award was the person to initially talk with me about the opportunity to serve as a Program Director at NSF as an IPA.

SCHULZ: I did some research. Several programs can be used for sabbaticals or as tools for developing relationships that may lead to sabbatical. For example, the National Science Foundation (NSF) (www.nsf.gov) has an office that specializes in International Programs². For those investigators with active NSF grants, researchers may apply for an international supplement related to their funding work similar to other supplements such as Research Experiences for Undergraduates. NSF also has three other programs that help facilitate international exchanges. In most cases, the NSF funds are designed to help U.S. faculty, researchers and students travel abroad and cannot be used for international researchers to come to the U.S. NSF encourages cooperative grants where international colleagues submit proposals

to their own funding agencies to allow exchanges and collaborations where international colleagues come to US institutions.

- NSF 04-035 International Research and Education: Planning Visits and Workshops
- NSF 04-036 Developing Global Scientists and Engineering (International Research Experiences for Students (IRES) and Doctoral Dissertation Enhancement Projects (DDEP))
- NSF 09-505 Partnerships for International Research and Education (PIRE)

What do you recommend to faculty considering these options to make sure that they make the most of their opportunity?

MCCUE: In my opinion, summer faculty research experiences are one of the best things new faculty can do to jumpstart their research careers. I had funding arise both directly (as a result of a lunchtime conversation with someone I never would have otherwise met) and indirectly from this program. I would advise participants in summer research programs to show up with a plan and a goal, but be flexible. That is, know what you want to work on, and target writing a paper or two, but keep your eyes and ears open for unexpected opportunities. I was able to pursue exciting research topics that quite literally fell in my lap by virtue of being there.

DAVIDSON: Don't be scared or shy. Talk to people to find out what your options are and then -- Just do it!

CRUMPTON-YOUNG: Ask lots of questions and make sure that you understand all of the details associated with the opportunity. Ask the tough questions of others who have had the job or similar positions before you. Plan the break at a time when you can best enjoy it (ie. you can be away from university responsibilities and expectations or family obligations without regret). Finally, make the most of the opportunity...allow yourself to do something different and enjoy it

SCHULZ: While the preparations may be a little crazy, the most important thing is to make the most of your sabbatical during the time, both professionally and personally. During my sabbatical I was able to travel to six different universities within the UK and share my research and learn about their research activities. I was also able to participate in two different European technical conferences. I learned about the UK system for undergraduate and graduate programs and how they are different from the US programs. I also learned some new techniques in my research area that I can now share within my current research activities.

Conclusion

The topic of this paper and the associated panel evolved from a discussion among peers about taking a break. While it appears that we all know someone who had a Fulbright, or took a sabbatical, many individuals have no idea how to go about pursuing such an opportunity. The purpose of this panel is to de-mystify these activities, hopefully leading to greater participation by faculty in these career broadening experiences.

Helpful Websites

1. Fulbright Scholars Program administered by the Council for International Exchange of Scholars, <http://www.cies.org/>
2. ONR Office of Naval Research Summer Faculty Research Program and Sabbatical Leave Program http://onr.asee.org/about_the_summer_faculty_program
3. UK Engineering and Physical Science Research Council (EPSRC) Visiting Researchers <http://www.epsrc.ac.uk/ResearchFunding/Opportunities/Networking/VisitingResearchers.htm>
4. US National Science Foundation Office of International Science and Engineering, <http://www.nsf.gov/div/index.jsp?div=OISE>