One Boys' Dream: Hitting a Homerun in the Bottom of the Ninth Inning

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ABSTRACT

One boys' dream of hitting a homerun in the bottom of the ninth inning has been realized in my career. My career started our as an epidemiologist in academia. My SAS® skills were pretty basic back then. My SAS skills advanced tremendously as I transitioned to working as a statistical SAS programmer in the pharmaceutical and medical device industries. My career has been varied from strictly working as a statistical SAS programmer to managing statistical SAS programmer. My interest in statistics began with my interest in baseball. Little did I realize that my interest in statistics as a teenager would lead to a fulfilling career and, thus, fulfill my childhood dream.

BACKGROUND

In baseball, one of the most thrilling moments is when a player hits a walk-off homerun. A walk-off homerun is when a team has its last chance to win a game and the player hits a homerun to win the game. As a child, I used to dream about hitting such a walk-off homerun. Of course, in my dream, it was always two outs and the count was 3 balls and 2 strikes when I hit the walk-off homerun that sailed over the fence and out of the ballpark!

As a child, I drove my parent crazy by scorekeeping baseball games at home and when we went to games. I grew up as a fan of the San Francisco Giants. I listened to their games at home and kept score until I had to go to bed. In the morning, I would check the newspaper to find out the final outcome of the game. Only when they were playing early (on the east coast) could I sometimes listen to the conclusion of the game before bed time.

As a teenager, I read an article about regression to the mean using baseball as example. In baseball, batting averages have a wide spread at the beginning of the season, but by the end of the season they have regressed to the mean. So, I did a project and kept track of players batting averages for an entire season and followed the formula in the article to predict their final batting averages and then compare the predictions with the actual batting averages. So, I understood regression to the mean well before I ever took a class in statistics.

In high school, I excelled in math and science. Algebra and geometry were fun and exciting for me. In college, I double majored in biology and chemistry. It was not until graduate school that I took my first statistics class. I majored in epidemiology and enjoyed all my statistics classes. Little did I realize when I was a kid doing scorekeeping that it would lead to a career in which I could use statistics in a practical way.

MY CAREER PATH

My career has had three distinct phases:

- Academic work in three medical schools as an epidemiologist

- A transition phase where I worked as a study coordinator on Alzheimer's disease clinical trials

- As a statistical SAS programmer for pharmaceutical and medical device companies

EPIDEMIOLOGIST

My career got off to a somewhat rocky start. I moved 2,000 miles from Southern California to New Orleans. My very first experience on the job was walking into a weekly team meeting to find everyone was in tears. The professor that I had been hired to work for had been killed the night before in a hit and run accident. In the end, I wound up working for several professors.

I learned SAS on the job at LSU School of Medicine. A professor taught me one-on-one. We used SAS version 79.6 (the version of SAS that came out in June of 1979) on an IBM mainframe. We upgraded to SAS 82 the next year. I worked on the Bogalusa Heart Study which was a combination of cross-sectional and longitudinal study of children for risk factors for heart disease. Mainly I analyzed data for the professors who worked on the study, but also got to be first author on one paper.

One event that I recall happening while I worked in New Orleans was being in a team meeting when someone burst into the room and told us that the space shuttle Challenger exploded, and all of the astronauts were killed. It was one of those moments when you realize that there are more important things than work.

After four years at LSU School of Medicine, I moved to the University of Alabama at Birmingham to work on the CARDIA study. The CARDIA study is a longitudinal study of cardiovascular risk factor in young adults. The study was like an

extension of the Bogalusa Heart Study. My work on the CARDIA study was very similar to my previous job, except that we worked on an Alpha VMS server instead of an IBM mainframe.

After three and half years in Birmingham, I moved back to California to work at Loma Linda University where I got my master's degree in epidemiology. Professionally, this was a big step. I was now a project coordinator of a matched case-control study of Creutzfeldt-Jakob Disease (CJD). As I project coordinator, I oversaw the day-to-day activities of the study, including obtaining death certificates of subjects who died of CJD and finding matched control subjects. I also oversaw telephone interviewers who interviewed the subjects' spouses and, finally, I also did statistical analyses using PC SAS.

One of my more interesting tasks as a project coordinator was to receive slides of brain tissue and take them to our pathologist to confirm that the subject did indeed have CJD. One day, a hospital sent a whole brain (properly packaged) instead of slides. I took the box with the whole brain to our pathologist so that he could prepare his own slides to confirm that the subject had CJD. While I was with the pathologist, his assistant came into his office to tell us that there were riots in Los Angeles due to the announcement about the police officers being acquitted in the Rodney King case. Fortunately, we were located about 60 miles east of the Los Angeles and were not affected by the riots.

So, in my first three jobs, I went from using SAS on an IBM mainframe to using SAS on an Alpha VMS server to using PC SAS. My SAS skills remained pretty much the same over those three jobs. I was very proficient with BASE SAS, STAT and GRAPH. However, I had not yet been exposed to the SAS Macro Language.

TRANSITION

In graduate school, I had been interested in clinical trials. So far, as an epidemiologist, I had worked on cross-sectional, longitudinal and matched case-control studies. I now took a job at the USC School of Medicine as a study coordinator of Alzheimer's disease clinical trials. As a study coordinator, I learned a lot about how clinical trials work. My day-to-day activities included subject recruitment, quality control of case report forms (CRFs) and source documentation, monitoring the study subjects' progress through the clinical trials and overseeing the research staff. We had a nurse who handled the coordination of the study subjects in the clinic.

The OJ Simpson trial occurred while I worked at USC School of Medicine. I took a train to Union Station in downtown Los Angeles and then a shuttle to USC. Union Station is not far from where the OJ Simpson trial took place. One day, as I was coming out of Union Station to catch the shuttle, I looked up and saw a plane with a banner that said, 'Marcia, marry me.' Obviously, it was referring to Marcia Clark who was the lead prosecutor in the OJ Simpson case.

What was the upside of working as a study coordinator? Knowing first-hand how adverse events are handled in a clinic helps me understand how to handle adverse events as a statistical programmer. Knowing how CRF's are handled and monitored helps me understand how data is collected in clinical trials. Thus, my first-hand experience with clinical trials was instrumental in me deciding to work as a statistical SAS programmer in the pharmaceutical and medical device industries What was the downside of working as a study coordinator? Although I did some statistical analyses for the principal investigator, overall, I had less time for programming.

STATISTICAL SAS PROGRAMMER

Two years later I got my first job as a SAS programmer in a pharmaceutical company as a contractor in the data management department writing edit checks in SAS. Seven months later I got a job as a statistical programmer at a pharmaceutical company. Taking a class in SAS macro language helped advance my skills tremendously. I also learned how to create reports using DATA _NUUL_. This was the days before ODS OUTPUT, so we had to INFILE SAS output (.lst file) to get a p-value. As my SAS skills advanced, so did my career. I went from an entry level statistical SAS programmer in five years.

While working at this pharmaceutical company, I took a train and shuttle to work. One day, I was driving to the train station when I heard that two jets had hit the Twin Towers in New York City. Normally, at the train station a lot of people are talking. Not that day. On the train, there was complete silence. One person had a radio and was giving the people on the train updates on what was happening. When I got to the office, no one was working. We were all in shock about this tragedy.

Next, I moved to a medical device company that produces in-vitro diagnostic (IVD) devices. In eleven years at this company, I went from a senior SAS programmer to become a senior manager of SAS programming. I continued taking SAS classes and improving my SAS skills. I also learned about CDISC at this company and I co-founded the CDISC Medical Device team in 2006. I still co-lead this team.

I then briefly worked as an Associate Director of Statistical Programming at a CRO and then as a Director of Statistical Programming for a pharmaceutical company. In both of these jobs, I still had some opportunity to use my SAS skills, but less time for programming. These two jobs required more oversight of staff than actual programming.

After nearly two years at these two jobs, I then moved back to a job that was 100% programming. I was 100% home-based in my new job as a consultant. This was a big change from working in the office for all of my career to working from home all of the time. Yes, it was lonely at times. But I did interact with team members via Skype.

The next change was also big. When I had worked for the IVD company, I had made several business trips to Switzerland (where the company had its headquarters). I even had the possibility of working in Europe, but that fell through. But it sparked an interest in me in working in Europe. I had really given up hope that I would ever work in Europe, until I got contacted by a recruiter through LinkedIn (yes, recruiting through LinkedIn does work) about a job in Copenhagen, Denmark. I now work for a company in Copenhagen and I am really enjoying the experience of working here.

I truly enjoy living and working in Denmark. It is more than just a shorter work week and more vacation time. The type of work that I do here in Denmark is very similar to previous jobs in the USA. But I feel that I am benefitting personally by learning to live and work in a different culture. Maybe some of that Danish hygge (a relaxed, cozy feeling) is rubbing off on me.

WHAT HAVE I LEARNED?

Here are some key things that I have learned over the years of my career:

- Being an introvert is not a good excuse for not being able to stand in front of an audience and do a good presentation.
- People skills are just as important as technical skills to be a good statistical SAS programmer.
- Speak up at work – to your manager, in team meetings, etc. Especially let your manager know what you want out of your career.
- Don't be afraid to take risk.
- Don't be afraid to admit mistakes.
- Do what you enjoy the most.

One thing that I have emphasized in my career is the importance of people skills (Smoak 2006, Smoak 2009, Smoak 2012). Yes, most statistical SAS programmers are introverts and work well on their own. But interacting with people is still important in being good at your job. I truly believe that people skills are just as important as technical skills in having a successful career. People skills can be learned just like technical skills. One of the best ways to develop people skills is to do presentations. Becoming a good presenter involves making eye contact with the audience and not just reading what is one the screen. People skills will help you in relating to your manager and team members.

NEXT STEPS

Yes, I am headed to retirement in a few years. It will be odd when the day comes that I no longer am actively using my SAS and CDISC knowledge on a day to day basis.

How will I occupy my time in retirement? I could use my SAS knowledge and work (volunteer) part-time for a non-governmental organization. I could volunteer my time in other charitable organizations. I would also spend time reading and traveling.

CONCLUSION

I have had many experiences in my career, from working in academia to working in the pharmaceutical and medical device industries. I have worked strictly as a statistical programmer and I have managed statistical programming groups. I have worked primarily in the USA, but now work in Europe. I truly had a satisfying career. Who knew that my reading of an article on regression to the mean using baseball would spark my interest in statistics? I certainly did not set out to become a SAS programmer, but I am glad that I did pursue this career path. So, as I look back on my childhood dream of hitting a homerun in the bottom of the ninth inning, I have indeed accomplished that dream professionally.

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