

# It Always Seems Impossible Until It Is Done



Sunghee Lee



*KrISTeN represents any hypothetical young woman who plans her career in a demanding field such as Chemistry and carries out her motherhood at the same time.*

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247

Dear KrISTeN,

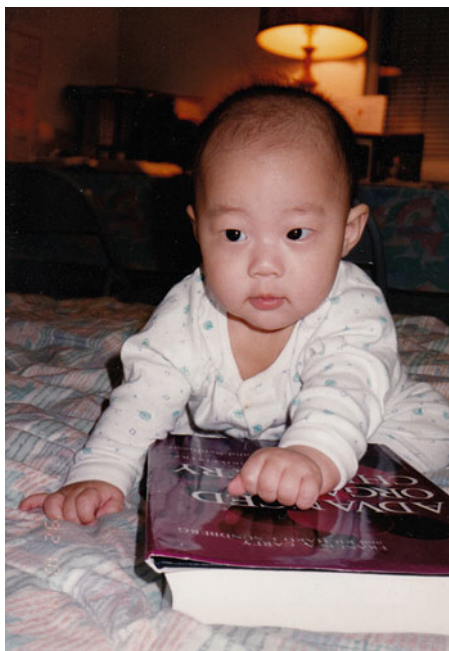
I couldn't stop thinking of our conversation the other day, about the dilemma you're facing in the career path you want to explore. You want to plan it "right" so that you can perfectly balance a career and family all together. So, here let me rewind my own experience (in no particular order) to recollect my path of the past 20 years or so. When I started writing this, I could not help thinking of Nelson Mandela's quote: "It always seems impossible until it's done."

## Starting Graduate School as a New Mom

Chemistry and motherhood are intimately intertwined to me. When my husband and I started our journey to graduate studies in chemistry at Brown University, my 2-month-old son was on the plane with us heading to Providence, RI, from Seoul, Korea. On that plane, I also had the good fortune of having my understanding mother sitting next to me, my relentless supporter for any decision I made in my life. Originally, my mom came along with us intending to stay and help out for just a few months until we settled into the new environment, but it didn't take long for her to realize that she cannot leave the care of her newborn grandchild in the hands of a busy chemistry graduate student couple. Since my mom could not stay for an extended period of time in the USA with only a visitor's visa, she had to frequently leave the USA and go back to Korea and come back again. I still remember the very friendly staff in the Foreign Student Office at Brown, who would write a letter for my mom to make sure that her frequent reentries to the USA were not scrutinized. My mom's frequent trips back and forth across the Pacific, enduring nearly 20-hour flights, lasted until my son was old enough to attend preschool. As you can imagine, every aspect of my life revolved around my mom's presence and absence. Rather more precisely, every aspect of my *mom's* life was planned around my busy schedule of study and research. Therefore, it is not an exaggeration to place my own mother front and center of what I have managed to accomplish.

Still, even with the tremendous support from my mom, it wasn't always easy. For example, my graduate study often involved trips to Brookhaven National Lab in NY to use the Synchrotron Light Source. For each trip, I left town for up to a week, and I found this away period to be very difficult, even knowing that my son was in good hands with his grandma. I kept a notebook filled with notes to my son while I stayed nights collecting data. This was my way of focusing on task and getting things done in a productive way, constantly reminding myself that I can't permit any of these efforts to go to waste. Still this day, I become very emotional when I look at the notes I wrote to James during my times away.

**Fig. 1** James (son) in 1992,  
3 months old



As you can imagine, entering graduate school with a 2-month baby is not a common scenario, but I was quite naive enough to be not fully aware of what it means to be simultaneously mother and PhD student in chemistry. To be frank, the decisions surrounding my career path and starting a family were not calculated or even carefully considered but rather followed naturally as life itself unfolded. I just let it happen. I met a man who was a fellow chemist, and we got married and had a baby and decided to continue study abroad together. I loved my son, and I loved the idea of continuing to study what I loved, chemistry! Nothing was fully planned ahead of time (Fig. 1).

Luckily for us, the environment at Brown University was nothing but welcoming for a graduate student couple, and I have no single memory of feeling awkward or feeling like a misfit during my entire graduate studies. My son was an integral part of my professional career, and we grew up together, as my knowledge of chemistry deepened. Instead of holding stuffed animals in bed, I often found him hugging and playing with a chemistry book and falling asleep, as those would be the objects hanging around and easily accessible for him. In his toy chest, along with Lego sets, you could sometimes find molecular modeling sets. He became an essential member of every holiday party and group picnic all throughout my graduate school and postdoctoral studies. He had started attending ACS National Meetings at the age of 3 and lasted until he graduated from high school.

Although I had very limited free time, I did organize play dates for my son as best as I could, took him for swimming sessions, arranged for violin lessons, and taught him and other children at the weekend school so that he would be occupied with



**Fig. 2** PhD Graduation at Brown in 1996, with James

many activities after his school day ended. My calendar was tightly organized and scheduled for every hour of the day including weekends. Every moment when I was not with him, I would be in the lab working. The worst feeling I got was to realize from time to time that I had allowed my time and efforts to be unproductive—“and I am not even taking care of my son at this moment.” As a result, I developed a habit of thinking, “I do not have a second to waste.” I carry this habit of treasuring every single minute even now. Largely thanks to my mom, and the understanding community at Brown, we graduated with a PhD in chemistry when James turned 5 years old, with myself being given the best PhD Thesis (Potter Prize) Award in Chemistry for that year (Fig. 2). We moved from Providence, RI, to College Station, TX, and then to Durham, NC, for our subsequent postdoctoral studies. By the time we settled in NY, my son had attended six schools in four different states. His world had been always revolved around the college, from Brown to Texas A&M and Duke University. However, I always felt bad knowing that my son was heartbroken whenever he had to move leaving his friends behind, and he wasn’t able to experience the beauty of lifelong relationships with his early childhood friends.

## Starting an Independent Career

Fast forward almost 20 years, nowadays, James and I talk about class management and how to engage students in a classroom, for he is now teaching Physics in a high school! James had not expressed a desire to become a teacher like his mom, at any point in growing up. Rather, he would occasionally complain about how I appeared to care more about my students and pay more attention to them. Nowadays, our conversations are often anchored around our students. I am sure that he now understands being an educator is not a 9 to 5 job, but one must be immersed in students' lives, beyond just classroom teaching and curriculum delivery. In other words, a great educator is the one who understands students and has patience, experience, and discipline and the one who would express plenty of care and love yet is not afraid of correcting their mistakes, just like any mother would do for their children. What previous experience could possibly prepare one more perfectly for this tremendous role, other than being a mother oneself?

My career path has taken me to a small predominantly undergraduate institution, where I try to accomplish a nearly impossible balance among full-time teaching, student advising and mentoring, and doing publishable research. Whenever someone describes what I do now as an impossible task, I remind myself how I managed my times at graduate school with an infant; I am reminded of times I felt badly to leave him alone and go away for my own professional development when he was only a small child; and I think of all the times that I chose to stay in the lab instead of joining other moms taking him for fun play activity. "It always seems impossible until it's done." What I am managing to do now is not nearly as impossible a task, compared to that. It does not involve heartbreaking decision. I just have to use my efforts efficiently. Being a mother and a full-time chemistry professor has only made me stronger and taught me how to effectively utilize every single hour of the day. As you can surmise, in a way, I am a mother to all my students with whom I interact. Seeing students' eyes widen upon learning something mind-blowing about chemistry is really a rewarding experience. But, the most rewarding part of my career is interacting with students and watching how they can take their beginner level of skills, knowledge, and confidence and steadily grow as they do research in my lab. It is not much different from raising my own child (Fig. 3).

## Balance

Balancing work and life comes down to knowing what the right priorities are. We always have to make a choice about what to do, when to do, and how to do. My choice has always been simply following my heart as a guiding light and doing the most important, meaningful thing first at that very moment. If you accept the fact that all the things you wanted don't have to be done at the same time, then with appropriate prioritization, you can do everything what you want without much



**Fig. 3** At the NCUR 2015 (National Conference on Undergraduate Research) with undergraduate research students, from left: Melissa Morales, Jaqueline Denver, Sunghee Lee, Michelle Muzzio, Omoakhe Tisor

sacrifice, just not at the same time. There will be a time when you are more of a PhD chemistry student or researcher or professor than a mother. There will be a time when you are more of a mother than a chemistry professor. The important message is to remember to be present fully, and be immersed in that moment sincerely, and give the best performance you can give at any moment. After all, this could have been the time that you could have spent with your child if you could—would you want to waste time just dwelling on that thought or rather get the most out of your day at work and be as productive as possible?

KrISTeN, I will tell you once again to follow your heart and be confident about your choice. You can only engineer so much about a successful career or life path. Rather, simply follow where your heart leads you and thoroughly enjoy the journey. Trust yourself and your decision along the way. Before you know it, you will be in a place where you have not imagined to be, but even better, “It always seems impossible until it’s done.”

**Reflections from Sunghee's Son****James H. Park (Age 25)**

You'd think that growing up with a chemistry professor as a mother would be tough, right? Right. I can't even begin to explain what the dinners in my house were like. She would frequently quiz me to recite the names of molecules in our food. Our salt shakers were labeled as NaCl instead of, well, salt. Furthermore, quite often the conversation around the dinner table evolves around experiments she did on that day, or recent articles she read, anything that chemists apparently find interesting. Needless to say, I became a physics major. Nothing personal mom, it's just that when you start to see your food as tiny molecules vibrating on a gelatinous mass of hydrophilic bonds, you tend to lose your appetite. And I like eating.

Still, I owe her a lot. Without her, I probably wouldn't have made it as a physics major in college, and I definitely wouldn't have become a high school teacher today. And it wasn't just her love for chemistry that did it. It was her love for me. Ever since I was a child, she pushed me harder than perhaps any other kid at that age to pursue my studies and to push my capabilities to the limit. Like herself, she wanted me to strive for greatness, to be the best in everything I tried. I still recall the motto she taught me to live life by: be ambitious, be organized, and have fun. I remember sitting down with her after school and learning precalculus in the fourth grade. I remember my weekly trips to the library, always eager to check out a new stack of books. I remember all the science fairs and all the geography bees and violin competitions I won. And it was all thanks to her. There was no way I could've mustered up that much motivation as a kid to work toward my goals without her. And none of it could've been possible without all the time and sacrifices she put into me.

Only recently I recounted the last part of my mom's motto. Have fun. I never truly believed that last part as a kid. For a while, I assumed she said that just to try and trick me into thinking doing math problems over having water gun fights with my friends was fun. But then I started to pay closer attention to her. I always knew how invested she was in her job, but the truth was I never understood why. Until now. And all it took was me finally taking the time to notice.

In conversations with my mother, it was immediately apparent how much she treasured her job by how fondly she would speak of her teaching experiences, even the more unpleasant ones. I saw how earnestly she would work on research projects with her students and witness firsthand the enthusiasm she would impart upon them. I could sense how much she cared for her students, how she constantly pushed them to work harder to achieve their goals. And it reminded me of something. It reminded me of my childhood, all those late afternoons spent with nothing but my mom, a pencil, and a notebook. It reminded me of the super-elated giddiness I felt every time I won an award, and the incredible joy I felt for so many years, every moment I was at school surrounded by friends and teachers who loved me for who I was. It reminded me that who I was only existed because of one person: my mom. In the end, it

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wasn't about her passion for chemistry or teaching. It was about doing what she loved, no matter what it was. Whether it was coming home early from work to help her son learn new things, or drawing molecular structures on the kitchen whiteboard during dinner as a conversation starter. It was all about having fun.

My mom has always been the best at everything and will always be the best in everything. Now, with a teaching job and a physics degree under my belt, I know exactly what to do. I'm going to become the best high school physics teacher in the world. And my inspiration is due to the strongest, smartest, and most loving mother in this universe and all parallel universes. My mom, the chemistry professor (Figs. 4 and 5).



**Fig. 4** Sunghee Lee's son James at his university graduation (He is now taller than me)



**Fig. 5** Sunghee Lee and her mom in Paris, 2013



**Acknowledgments** Each and every unfolding event in life can be traced back to its origins: what I enjoy today is the result of yesterday. For that matter, I am grateful for everyone with whom I have crossed paths, from my teachers who always provided encouragement to me to believe in hard-work; my friends from graduate school who made such challenging times be rather fun; and my family, who have had infinite understanding about my distorted priorities at times. I am thankful for all my past and current students at Iona College who allowed me to practice what I preach, allowed me to enter into an important point in their lives, and gave me a chance to pass the wisdom I learned along life's journey.

## About the Author

### *Education and Professional Career*

1989	BS Chemistry, Sung Kyun Kwan University, Seoul, S. Korea
1991	MS Physical Chemistry, Pohang University of Science and Technology, Pohang, S. Korea
1992	Pohang Iron & Steel Co. Inc., Materials Science, Pohang, S. Korea, Research Scientist
1996	PhD Inorganic Chemistry, Brown University, Providence, RI
1997–1998	Postdoctoral Research Associate, Texas A&M University, College Station, TX
1998–2002	Postdoctoral Research Associate, Duke University, Durham, NC
2003–2004	Bergen Community College, Division of Science, Paramus, NJ, Science Faculty
2004–2008	Assistant Professor, Iona College, Department of Chemistry, New Rochelle, NY
2008–2013	Associate Professor, Iona College, Department of Chemistry, New Rochelle, NY
2010–present	Department Chair, Iona College, Department of Chemistry, New Rochelle, NY
2013–present	Professor, Iona College, Department of Chemistry, New Rochelle, NY
2014–present	Board of Trustees Endowed Professor in Science, Iona College, New Rochelle, NY

### *Honors and Awards (Selected)*

2017	Iona College Honors Program Faculty Member of the Year
2016	Br. William Cornelia Distinguished Faculty Award, Iona College
2014	Board of Trustees Endowed Professor in Science

- 2013 The Rising Star Award, American Chemical Society (ACS) Women Chemists Committee
- 2013 The Distinguished Scientist Award, Westchester Chemical Society, New York ACS
- 2013 Br. Arthur Loftus Faculty Award for Outstanding Student Research, Iona College
- 2013 Woman of Achievement Award, Iona College
- 2011 Honors Program Teacher/Advisor of the Year Award, Iona College

Sunghee is a passionate teacher-scholar, now leading a very successful undergraduate research group at a predominantly undergraduate institution. Her research group, nicknamed “Project Symphony,” consists solely of undergraduate students, many of them female. She has spearhead many STEM initiatives at Iona College and the wider community to emphasize the significance of STEM education as well as the foundational role played by chemistry in all neighboring sciences.