My Journey: a True Case Study about Straddling Two Worlds

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Where I come from
I am married to an engineer and we have three children. Let’s talk about challenges!
I come from a family of farmers, mainly coffee plantation owners (small scale)
My community: hard working, honest people with a great heart
My elementary school, founded in 1895
My high school, founded in 1970

• For many years, only the wealthy people in the town could afford to go to high school in the capital and an even smaller number to college.
• Around 1970, hundreds of high schools were built around the country and everything changed!
First person in my family (including extended family) to go to college

- Excellent student in high school. Got awards for best grades every year.
- Did not have role models in my family or within our group of friends.
- Encountered financial and social issues.
- I was not the typical person who will go to college from my town. And being a woman, the question was why do you want to go to college? Why not a technical career like working in a bank?
Mentors to the rescue

- I was very active in all kinds of activities at school and became friends with many teachers, especially my chemistry and math teachers.
- My chemistry teacher became my first real mentor, helping me to realize all the potential I had.
- She came to my house and convinced my mother that I should go to college. But how? Who can pay for college?

Good students normally get high scores in the University’s admission test

If your score is high, you can apply for scholarships

High GPA = no tuition
You actually get money for transportation and food
What my mentor did not tell me: “the rules of the game”

- How competitive is the admission test
- Students prepared for a year with private tutors
- Scholarships do not cover room and board

- Classes start at 7 am and I lived 90 minutes by bus from the campus
- If you failed a class, your scholarship is taken away

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Transitioning from a small community to the best university in the country

- Very difficult first semester
  - Long commute
  - Peers mostly coming from a different socio-economic status than mine
  - Different academic expectations than I used to. I was not number one any more, just another student
  - 40000 students on campus; classes with 200 students

- Doubted if I could make it and explored other paths, but keep fighting.

- Peers started to recognized my academic skills and let me entered their circle.

- Became more involved in the Department and soon some Faculty members became my mentors and advocates.
Undergraduate and Master degrees

- Got my BS and MS in Chemistry from the University of Costa Rica.
- Became an instructor of Analytical Chemistry (AL) and Laboratory Coordinator for all AL classes, before finishing my MS.
- Managed 22 TAs and 3 full time Lab assistants, and I was only 23 years old.
- Had excellent mentors who trusted me, offered guidance when asked, and always respected my independence.
And now what? Interesting conversations and decisions

Family is happy, but not sure what I was doing

Teacher?

Working in industry?

Giselle: Well, I am thinking about studying more and getting a doctorate

Family: Great, wow, a doctor in the family. Which hospital are you going to work?
And even bigger challenges: graduate school and postdoc? What are you doing?

- Back in the late 80’s, only the children of professors and other privilege groups were aware of TA’s and RA’s for science students in the USA and Europe.
- The University also used to send some of their students, but it was not a transparent process.
- In 1988, Prof. Lyle Hall (RIP), from the University of Wisconsin at River Falls, came to the UCR for a sabbatical leave. He had a passion to help minorities and chose us for his cause.
- He taught several groups and opened our eyes to the possibilities of graduate school.
- In 1990, he helped 60 students with applications and all were accepted. I was one of them!
- Good luck explaining your family you are moving to another country to pursue a degree they do not understand what it is useful for.
PhD and Postdoc

- Got my PhD in Electrochemistry in August of 1994 at NIU, working with Prof. Petr Vanysek.
- Joined the Chemistry Division at Argonne as a postdoc, on September of 1994.
- In March of 1996, I was promoted to Assistant Chemist.
- I strongly believe in mentoring. I have been on both sides of the relationship and have equally benefited.
Career at Argonne: Research Part 1

- Novel carbon anodes for lithium rechargeable batteries, using inorganic templating methods.
- Novel carbons for hydrogen storage applications.
- Polymer nanocomposite membranes for solid state electrolytes, selective separations, and catalysis.
Career at Argonne: Administration

- Joined the Division of Educational Programs in January of 2007 as the Postdoctoral Program Coordinator.
- Built the program from an “idea” to what it is today, including the Lab wide mentoring program.
- Deeply enjoyed (and still do) working with the postdocs and interacting with upper level management.
- Made Argonne a member of the National Postdoctoral Association (NPA) and invited a member of their board, who help establishing the Postdoctoral Society of Argonne.

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Career at Argonne: Research Part 2

- **Nuclear Forensics and Nanoscale Engineering**

- **Nanosensors Development**

**Eichrom Sr Resin** used to separate Cs/Ba and Sr/Zr mixtures. Barium and Sr are retained in crown ether at relatively high acid strength; eluted by raising pH.
Career at Argonne: Service and Outreaching

- Women in Science and Technology Program Initiator
- Division Postdoctoral Mentoring Coordinator
- Mentor of three postdocs from my division
- Chair of the Chicago Section of the Electrochemical Society
- Advisor (and past president and vice-president) of the Hispanic Latino Club
- Member of Argonne Combined Appeal Steering Committee
My Humble Advice

- Stay focused, but at the same time, be flexible.
- Discuss and collaborate with as many people as you can.
- Communicate clearly and often with your supervisor and mentor.
- Networking is a powerful tool. Do not underestimate it.
- Respect and be supportive of your colleagues’ and students’ career decisions (academia, industry, National Labs, administration).
- And most importantly, enjoy what you are doing and evaluate if you are not.
Graduate Students

Dr. Riza Kizilel, Turkey
Dr. Humberto Joachin, California
Dr. Wenquan Lu, Argonne National Laboratory
Dr. Hui Yang, China
Dr. Renata Nome, Brazil
Dr. Chang Keun Back, South Korea
Mr. Arikrishnan Chandrasekaran, India
Mrs. Martha Campell
Mrs. Laura Walhof
Mrs. Marta Zolyniak, Poland
Mr. Alfredo Bobadilla, Texas A & M

Undergraduate Students

Mr. Fernando González, Puerto Rico
Mr. Matthew Eibling, New York
Ms. Monica Villar, Texas
Mr. David Bourdonay, Texas
Ms. April Buckley, Chicago
Ms. Yvonne Franchini, Joliet