

# From Dentistry to Immunology: Navigating Challenges and Building a Career in Neuroimmunology

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## Abstract

This journey traces the transition from a brief dentistry stint to a neuroimmunology exploration. The narrative unfolds through academic pursuits at the University of São Paulo, Brazil, and subsequent doctoral studies, reflecting on the initial idealism that shaped the pursuit of academia. An unexpected postdoctoral experience at the Centre de Physiopathologie de Toulouse Purpan in France introduced me to immunology, leading to an unexpected passion. Here, I explore uncertainties, decisions, and a pivotal move to Belgium, where collaboration with Adrian Liston at VIB-KU Leuven marked a maturity phase. Amid personal milestones like pregnancy and the challenges of balancing parenthood with a burgeoning career, I would like to highlight the crucial role of support systems and a thriving research environment. My journey so far culminates in the establishment of a lab, the pursuit of a permanent position, and the appointment as an assistant professor at KU Leuven.

Title: From Dentistry to Immunology: Navigating Challenges and Building a Career in Neuroimmunology

Running head: Navigating challenges in academic research

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I am a dentist by profession and worked in that field for a few months after completing my graduation. However, my time as a master's student at the laboratory proved to be significantly more captivating and fulfilling for me. This experience led me to make the decision to leave my career as a dentist and embark on a journey as a PhD student in the field of neurosciences at the University of São Paulo, Brazil. The prospect of unraveling the mysteries of brain inflammation and my aspirations of becoming a university professor were the driving forces behind my pursuit of a PhD.

Admittedly, I initially held a romanticized vision of academia, with my career goal set on pursuing a Ph.D., followed by a few years of postdoc, and landing a position as a Principal Investigator (PI) at the University of São Paulo. However, my ideals about a smooth academic career underwent a swift transformation during the years of my Ph.D. Frequent failures and dead ends, coupled with the realization that the journal in which I published my work was low impact, left me feeling lost in translation towards the end of my Ph.D. Fortunately, my Ph.D. supervisor Cristoforo, who was incredibly enthusiastic, provided significant support to navigate through this period of my life.

After completing my Ph.D., I decided to give academia and research another chance. My partner, also a researcher, was working in France, and I planned to join him there. To facilitate this, I applied for a new type of funding from the São Paulo Research Foundation, aimed at young researchers wishing to undertake a one-year postdoc overseas. I was granted the funding and decided to pursue a position at the same institute

where my partner was working: the *Centre de physiopathologie de Toulouse Purpan* - CPTP (now renamed INFINITY). Although I knew nothing about immunology, I was accepted into Roland's lab, which focused on autoimmune diseases in the brain. This unusual choice turned out to be an unexpected opportunity. Under my mentor's guidance, I learned to ask questions, embraced the idea that it was okay to make mistakes, and developed a passion for neuroimmunology—a challenging yet incredibly rewarding field. Originally planning to stay for one year, I ended up spending an additional five years with Roland. Looking back, I consider these years as some of the best in terms of my scientific learning, not only from Roland and his team but also from the vibrant scientific community at CPTP.

However, as a postdoc, I was surrounded by uncertainties—financial, career-related, and even regarding staying in Europe; as I am a non-EU citizen, my visa was tied to my work contract. In search for perspective, I requested advice from all corners: family, friends, PIs, colleagues. In the end, I realized that no one could make the decision for me; I held the sole responsibility for determining my destiny. I said to my partner, 'We won't move again for a postdoc. The next one will be our last one.' Both my partner and I were in our late thirties, and due to the short-term nature of our postdoc contracts, we felt like life was slipping through our fingers.

The last move was to Belgium. One year before my French contract was expiring, I went to talk with Adrian Liston to ask if he could take me on as a senior postdoc in his lab. During the interview, Adrian was candid with me — no glossing over my CV or my prospects. A few weeks after our talk though, he offered a 2-year contract in his lab at VIB-KU Leuven, in Belgium; I was elated.

During these years with Adrian, I dedicated my efforts to publishing meaningful work. My project began yielding interesting results, and discussing my ideas with others confirmed my love for research, compelling me to continue this path. Meanwhile, I was always waiting for more permanency and stability, which I started to doubt would ever happen. On top of that, I became pregnant while my paper was in the revision stage. Still, my partner reassured me, 'Everything will be fine; let's just go for it.' Once again, I consider myself lucky for the extensive support from my partner and the exceptional working environment and resources provided by my mentor. I had an amazing team of co-workers who were remarkably capable and competent researchers and while I was on maternity leave, amid the peak of the COVID-19 pandemic, my colleagues carried out my project, with Adrian steering it and pouring resources without restrictions. The result of this teamwork was a paper published in a reputable journal, which also received good media attention. Upon returning from maternity leave, I still had the full support of my colleagues and my mentor, something I realized was a great privilege. While at Adrian's lab, I began searching for a permanent position as a PI. In 2021 KU Leuven published a job for an assistant professorship that resonated with my profile, so I decided to apply. The application required a significant amount of work, but my mentor and colleagues provided full support. After a series of interviews and presentations, I received an offer from KU Leuven: my journey as a PI began in November 2022. Six months after my appointment, my partner also secured a tenured track in the same university as mine.

I had my son two years before starting my lab. As a newly established investigator with a small child and no network for support, I quickly discovered my most valuable asset: time. Since having my son, I've experienced a huge wave of anxiety. I felt anxious for not being a good enough PI or good mother. I realized that effectively managing my time helps alleviating this feeling. Becoming organized and pragmatic, with a keen sense of urgency, has proven beneficial for me. Firstly, starting this year, I organize all lab activities—experiments, meetings, teaching—during school hours. Secondly, I maintain flexible work hours and occasionally work from home or at unconventional times. While I'm still learning to protect my time and be more efficient, I'm enjoying the journey. I am grateful for the opportunity to pursue my passion and contribute to the scientific community. My journey from dentistry to neuroscience and immunology has been filled with ups and downs, but each step has taught me valuable lessons and shaped me into the scientist I am today.

With that said, these are my thoughts after years in academia:

Who am I?

I believe that choosing the right lab for your profile is the most important step early in your career. Before committing to a lab and spending years, it is advised to conduct thorough research. Ideally, you should know who you are and what are your preferences: What kind of PI do you prefer? One who tries to motivate you, or one who lets your feelings be? One who is very present and hands-on, or one who allows you to solve your own problems and gives you more freedom? One who gives advice? Do you prefer a big lab with lots of members or a smaller one? Do you prefer a neat lab or is disorder acceptable? Your personality and the lab's style must align; otherwise, conflicts in work style might arise, and generally, it is a difficult issue to solve.

Who is the PI?

I was lucky to have mentors who made positive contributions to my academic life. A good mentor will encourage your interests and support them, provide the resources you need, promote you and your work, advise you when needed on scientific direction, offer psychological support, and assist you in the next steps of your career. A good mentor is also clear about their expectations, is trustworthy and has good management skills, is accessible and approachable. Finally, a mentor who values your motivation and work ethic, and has the ability to see past your shortcomings, is a huge plus. Once you have a shortlist of potential PIs, reach out to them for informational interviews. Discuss their research, expectations for students, and the lab's dynamics.

Who are they?

Conduct thorough research about the lab of interest. What is the research area? What is the quality of publications? What are the alumni of the lab doing now? Is the lab well-equipped and well-financed? Is it well-resourced in terms of technicians, managers, postdocs, students, secretaries, and order processing personnel? Does the lab have additional duties (cleaning, receiving products, animal care...), and are you comfortable with that? Talk to current and former students mentored by the PI and ask about their experiences.

What is next?

Many doctoral students and researchers face a lack of perspective regarding their careers. Competition for research positions and funding is fierce, and the journey to becoming an established academic researcher can be long and arduous. The reality is that professor positions are limited and highly competitive. It's crucial to recognize that academic positions are just one of many great potential paths for researchers. We are trained not only to excel in academia but also to be directors, principal scientists, managers, critical thinkers, innovators, and effective communicators in various capacities<sup>1</sup>.

1 Liston A, Makaroff LE. Strategic career building during your PhD: a timeline for maximizing your opportunities. *Immunol Cell Biol* 2023;**101** : 793-797.