

## **Minorities in science: a case report from Québec**

The Fonds de la Recherche en Santé du Québec (FRSQ) is the leading Québec-supported organization for the development of medical science within the province. One of its missions is to fund independent researchers in a process intended to select the scientists who show the most promising abilities to direct successful medical research laboratories in Québec universities. I am writing to report that the FRSQ competition rules place some candidates at a significant competitive disadvantage. I hope that someday these rules will evolve to allow a more diverse group of candidates to compete on a level playing field.

I am a female scientist who was born profoundly deaf in both ears. In practical terms, a person born profoundly deaf will hear nothing unless you shout close to his/her ear. With hearing aids, she/he will hear sound frequencies unequally and will often not be able to discriminate and understand the different sounds that compose words. Therefore, to communicate with other people, she/he must learn to lip-read and to speak audibly while relying on whatever weak hearing remains. Many such children are nowadays helped with cochlear implants, which facilitate their inclusion into the hearing world. In my case, having been a profoundly deaf child in the 70s and 80s, I had to master my mother tongue without such aids. With a lot of hard work and help and encouragement from my family, I managed to attend a normal school and even complete university education at the Ph.D. level. Doing so required extra work, such as finding in books the information that I missed from a lack of a full understanding of courses that were delivered orally.

What interests me is basic medical science. I obtained a Ph.D. with honors in Immunology from the University of Paris 7 in December 1998. I was very lucky that my graduate studies were under the supervision of mentors who were more interested in scientific challenges than in worrying about my deafness. At the end of my Ph.D., I was not able to speak English. Nonetheless, a brilliant female scientist who ran a lab at Boston University and who could speak French recruited me. This allowed me to perform post-graduate studies in Oncology and gradually learn English. Since scientific publications are a measure of the worth of scientific work, I am proud to report that nineteen publications resulted from my doctoral and postdoctoral studies.

At the end of my post-graduate studies, my husband and I moved to Montreal. At that time, I did not feel confident enough to start my own research group and I was quite busy at home as the mother of a young boy. I accepted a position as a research associate at McGill University, first in Virology and later in Regenerative Medicine. Again, I was very fortunate to work with mentors who were willing to hire me despite my deafness. In 2007, I gave birth to twin boys and, like many other women, I tried my best to juggle laboratory work with raising children. When my twins turned two-and-a-half, I felt that I was ready to direct my own research project in a highly competitive field. At that time, I had accumulated enough experience to supervise students in the laboratories where I worked and I could see that my mentors often relied on my suggestions. For the first time of my life, I felt that my training in research would allow me to become an independent scientific investigator in spite of all the difficulties or delays I had encountered.

At the time, there was no faculty position available in the university department where I submitted my candidacy. Hence, the only possible option for me to have an independent research project would have been to obtain a salary support from the FRSQ, the only Québec governmental organization that provides salary support for researchers. The rules of such “career awards” for Research Scholars are quite complicated. Scientists are classified after their postdoctoral training as Junior 1, Junior 2, Senior, or National, depending on the year of completion of their last diploma. Junior 1 candidates are scientists with 0 to 3 years of experience and Junior 2 candidates are scientists with 4 to 7 years of experience. In most cases, Junior 1 candidates were trying to obtain a career award that would support their early independent research activities. At the Junior 2 level, most candidates had proven experience in training students and obtaining independent research support, which is critical for obtaining a Junior 2 or Senior career award. I was classified by the FRSQ with 5 years of experience and hence as a Junior 2 level candidate. As a result, even though I had more total publications and more first-author publications than the average Junior 1 or Junior 2 awardees, I was at a severe competitive disadvantage as a Junior 2 candidate because of my lack of experience as an independent scientist. Had I been allowed to compete as a Junior 1 candidate, my application would have been much more impressive. The FRSQ acknowledged that my classification placed me in a highly disadvantageous position but refused to make any allowance for the reasons why my advancement to an independent position had been delayed. I was surprised to discover that the FRSQ would not give me any extension based on my handicap. In addition, the FRSQ would only take into account the duration of my maternity leaves after the completion of my Ph.D., regardless to the number of children I have. Other instances have more realistic standards for female scientists with children. For instance, the European Research Council allows 18 months of effective elapsed time for each child born before or after the Ph.D.

The Province of Québec and the FRSQ set the rules for the competition. Those rules are reasonable for the average male scientist (without a handicap). In fact, 80% of Junior 1 and Junior 2 research scholar career awards from the FRSQ to support basic medical research were given to male scientists in 2010. In my case, I feel that the differences that make me a minority in the world, especially among Ph.D.s, are not being taken into account. Eventually, I decided to remove my candidacy for a career award but I regret that I was not given the chance to compete under fair conditions.

I would like to congratulate the too few women who direct successful laboratories in basic science. I wish I were also able to congratulate severely disabled persons in science, but I personally do not know such people. If you do, please acknowledge their achievement.

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