

# Mentoring Between Continents: A Conversation

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She (MBD) was a student who needed to arrange a research project for 3 months of her third year of medical school, and she wanted to do something overseas. He (PRF) was a professor who had been involved in pediatric research, much of it overseas, for longer than she had been alive. She wanted to be mentored, and he wanted to mentor. Maybe we can all learn from what they went through.

**PRF:** After great pediatric training in the United States, I headed overseas in 1984 with a passion to do clinical research. I asked 2 mentors what I should study. One said, “I don’t know. I don’t know what the questions are.” The other said, “*Cryptosporidium*.” Following the second mentor’s advice, I decided to study and to learn about the transmission and consequences of *Cryptosporidium* infection in rural African families. We collected stool samples and epidemiological information from rural communities in Zaire (now Democratic Republic of the Congo) to answer my research questions. However, there were many problems with this initial overseas research project. As a result of local tribal conflict and death threats, one study village was entirely abandoned between our visit to gain consent and our return visit to collect samples. Additionally, the stool assay I was using failed, and no useful results were obtained.

Along the way, in the course of my daily clinical work, I encountered a number of febrile newborns with malaria parasitemia and wondered why so many medical texts considered congenital malaria to be “exceedingly rare.” The practical malaria question resulted in research that identified the incidence and impact of neonatal parasitemia and corrected the myth that congenital malaria was uncommon. I concluded that my first mentor had indeed been correct: the best research often arises from personal, clinical questions rather than from someone else’s conception of what is needed. As I mentor, I must help trainees pose clinical research questions that are personally important to them while also being relevant to the population being studied, important to medical science, and feasible to study.

**MBD:** Dr Fischer made a convincing argument for the importance of forming my own research question. However, my experience with clinical medicine was limited to my medical school education and clinics in the United States. I was interested in HIV and I wanted to travel to Africa, but without any personal experience, I did not know where to start to form a research question. I only had a limited time to work on the project and wanted a mentor to tell me what to do.

Dr Fischer knew a physician from Nigeria who was planning on visiting the United States, so I e-mailed the Nigerian physician. From his experience he noted that it seemed polygamous individuals with HIV fared better than did those who did not officially have multiple spouses. I was intrigued and thought this observation could be the start of my overseas research project. I consulted with Dr Fischer, as well as another physician who had spent several years working in Africa, about the potential project. Dr Fischer, the other US physician, and the Nigerian physician all agreed to mentor me through the research. We all met while the Nigerian physician was visiting the United States, and a project came together. We planned to review data from the antiretroviral treatment program at the clinic run by the Nigerian physician to determine how marital status and religion related to disease progression.

**PRF:** Whether the polygamy issue was personally interesting to me or not, Malini had identified this as an important question. A literature review confirmed that this was an incompletely studied issue. Malini got input from several mentors with various perspectives. Her findings could potentially help people target both preventive interventions and therapeutic activities to better help high-risk groups. This had the makings of a good study—important and relevant. Now the only question that remained was the feasibility of the project.

**MBD:** The Nigerian doctor told us about the funding his clinic received through the President’s Emergency Program for AIDS Relief (PEPFAR). Along with treatment, the program provided access to computers and data-collection software. It sounded like it would be fairly easy to retrieve and analyze data during my 2 months in Nigeria. I hoped to finish gathering data within a month of arriving so that I could spend the last few weeks of my trip doing clinical work. I was concerned about personal safety issues and funding my research project. Both the Nigerian doctor

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and Dr Fischer were able to answer my questions about where I would be staying and how I would look after myself. I received funding through the Department of Family Medicine with the help of my other US mentor.

**PRF:** Malini did a good job on the United States–based preparations for the study. She wrote a nice, hypothesis-driven protocol, obtained institutional review board approval on 2 continents, and was able to garner funding by doing the project through the Department of Family Medicine at our institution. I had known the physician Malini would be working with in Nigeria for several years and had traveled to Jos, the city in Nigeria where Malini would be working, several times before. One of my sons had spent a summer working at the clinic where she would be and had loved the experience. I knew she would be well taken care of by her mentor, and I also had some other friends in the area whom I knew Malini could contact if she had any troubles while she was there.

**MBD:** I was fairly naïve going into the project. Although I had some idea about what the research would entail as far as data collection, I did not know how I was going to analyze the numbers to transform the data into useful information. Luckily, my mentors were experienced researchers and recognized that we would need some help with the statistical analysis. When we applied for the research grant through the Department of Family Medicine, the project budget included funding for a biostatistician and money to cover my travel expenses while in Nigeria. After learning how my project would be funded, the rest of the preparations seemed easy. I booked a ticket, let the doctor in Nigeria know when I was arriving, and was told that he would meet me at the airport in Abuja, Nigeria. We would spend the night at a guest house in Abuja and then make our way to Jos, a 3-hour drive through northern Nigeria. After arriving in Jos, I would be staying at the clinic's guesthouse along with some other US volunteers who would be staying in Nigeria the entire time I would be working there. Everything seemed to be falling into place.

**PRF:** We were all excited for the project to begin and to hear about Malini's experience in Jos. I saw her a few days before she left. The trip logistics were all set, she was optimistic about the study, and she was anxious for the research to begin.

**MBD:** I was excited to be in Nigeria. My flights were all on time; I was picked up at the airport without a problem and made it through customs in record speed. The people I met were extremely welcoming, and from the day I first arrived, I recognized the necessity of the work at the hospital and HIV clinic. Rather than charging into my project, I spent the first few days adjusting to the new time zone and environment, visiting the clinic, and meeting the people with whom I would be working for the next couple of months. Then reality hit. Although there were computer records for all patients enrolled in the PEPFAR program, the data on which I had based my project proposal were not available! The software did not include all the epidemiologic data (eg, marital status, polygamy versus monogamy, and religious affiliation) around which we had built the

study. The data entry team had gotten behind in transcribing handwritten registration sheets and lab results into the PEPFAR-provided computer system. Adding to these difficulties, a few months before my arrival, a fire in a clinic building had destroyed many of the original patient records before they had been transcribed into the computer records.

**PRF:** Before my first trip to Africa, I was told of the "Eleventh Commandment": "Thou shalt be flexible." Malini was experiencing life in Africa. In fact, she was also experiencing the life of a clinical researcher. From the other side of the Atlantic, I pontificated about the importance of flexibility and offered platitudes about how Malini would figure something out.

**MBD:** The encouraging e-mails and words of advice helped, but the research situation was far from what I had expected, and at times I was frustrated to tears. My Nigerian mentor was responsible for running the whole HIV program, in addition to his day job as a clinical pathologist and instructor at the local teaching hospital. He was not always at the clinic when I felt like I needed help. I felt the pressure of time—3 weeks into my stay I had barely collected any data, and ideas about how I would gather all the information I needed were changing daily. Meanwhile, the local workers responsible for the data didn't seem to care. They politely agreed to find and document all the missing data, but that just did not happen. I slowly realized that they were kind but totally uninterested in doing "extra work" for my "American" project.

**PRF:** Indeed, some of the greatest lessons come when we experience totally new settings. Approaches to work vary between the typical "task-oriented American" and the "people-centered, relational African." It's not a right versus wrong issue; it's a matter of cultural differences in perspective—and it can be very frustrating. If I had more fully prepared Malini and if we had more completely evaluated the overseas situations, we might have avoided or at least tempered some of Malini's frustration.

**MBD:** Some of the frustrations were simply over practical details. Toward the beginning of my trip, the clinic decided to change the way they organized their patient files. Paper files had been renumbered, making the task of matching paper files with computer records, which had been labeled by a different number, almost impossible. I also had some communication problems, especially initially. Although my Nigerian collaborators and I spoke English together, sometimes neither the words nor the concepts came through without further discussion and translation. And time. Things took much longer than I had anticipated. One of my biggest frustrations was that I had to set my pace by what other people could do; I couldn't plan the project based on what I could do. I guess this shouldn't have been a surprise—I was there for the project, but my coworkers had their own priorities. Although it was easy for me to spend as much time at the clinic as I wanted, my coworkers had social lives and families competing for their time. I acknowledged this, adjusted my expectations for data collection, and relaxed my pace a bit. As I changed my opinions of how much work we were accomplishing and how much we should be doing, my coworkers began

to help more, and suddenly I found the data coming in much more easily.

After overcoming the initial roadblock of lacking the data around which we had built the study, we began re-designing the project. Instead of starting with the initial hypothesis or making up a new hypothesis, we started with the data. We looked at all the data we did have and then wondered what we could learn from it. I was still focused on figuring out factors that might predict or even cause variations in disease progression and death. Although we couldn't get all the marital and personal information we wanted, looking through the available data left me wondering about several other factors that might relate to disease progression. As I changed the direction of the study, I was able to enjoy my time in Jos more, too. I had fun visiting friends' homes and traveling to a nearby game preserve.

**PRF:** And it all ended up working. Malini showed that more rapid progression to death despite antiretroviral treatment relates to male gender, an initial CD4 count less than 50, and concurrent tuberculosis treatment. Practically, this is important. All the efforts to help needy women with HIV should be complemented by efforts to help infected men. And delays in treatment initiation in resource-limited areas should be minimized to prevent patients from dropping their immunity to irrecoverably low levels. There were lots of lessons about dealing with diversity in Malini's experience, like learning to identify differences without placing values on them. But the research kept Malini busy, and I don't think she began to realize all she was learning about working in another culture until after she returned. Although the research project may have been frustrating, she did not allow her frustrations to stop her from enjoying her trip or taking part in Nigerian life. When I visited Nigeria 6 months after Malini had returned to the United States, I found lots of people who still felt personally bonded to her. She found ways to bridge cultures, identify mutually shared goals, and develop strong interpersonal relationships.

**MBD:** My experience in Nigeria provided me with life lessons I have only begun to appreciate. I became more comfortable and at ease with the slower pace of life that exists outside the United States, particularly in the developing world. I became more aware of how, in certain areas of the world, HIV affects the lives of all people, not just those who are infected. Finally, I saw more clearly that in research, as in life, it's often necessary to ask for help and realize our personal limits. When we seek others' experience and expertise, we take advantage of the benefits of collaboration, which almost always improve the quality of the task at hand and make our experiences more enjoyable.

My mentoring relationship with Dr Fischer made this last lesson abundantly clear. I went into my research quarter hoping for a mentor who would tell me what to do and walk me through the steps one by one. However, in the process of conducting my research project, I learned that the ability to draw on the experience of mentors and learn from their wisdom while making mistakes and struggling

through the research, although difficult, was more beneficial in the long run.

Toward the middle of my trip, I received an e-mail from Dr Fischer that included the following: "I am now convinced that you have learned the most important lesson in research—actually several of the most important lessons. Research is unpredictable and often frustrating. Research is full of surprises. Data collection takes time and rigor. Researchers must be flexible." Although I wished I had known this before I left for my trip, I don't think his statement would have made as great an impact on me before I had experienced it for myself.

In addition to recognizing that research doesn't always go as planned and that flexibility is an absolute necessity, I learned that I would continue to struggle with research if I didn't have a better understanding of statistics. In Nigeria, I didn't know what I could and could not do with the data available to me. I finished my time in Nigeria with a desire to learn more about clinical research, and I quickly applied for a MPH program. After 3 semesters of studying public health, I am more comfortable with biostatistics, evaluation studies, and epidemiology.

More than merely learning about research, however, I have also become more grateful for the mentoring experience that brought me to this point. I now realize that to be a good mentor, you not only need to be able to answer a mentee's academic questions, but you also must be willing to share your experiences with him or her. Good mentors have confidence in their mentees while recognizing the mentees' limitations and helping them develop those skills that need improvement. Good mentors support their mentees through hardships and celebrate successes. Finally, good mentors do not pretend to have the answers to everything. They recognize their own limits and know when to bring in reinforcements for help.

**PRF:** I started this project thinking I was the teacher, but I think I learned more than Malini did. The lack of specific guidance and direction from me early on left Malini with lots of frustration. I hope I can translate my new understanding in ways that will be as practically useful to future mentees as Malini's HIV study itself was. I learned that I do need to provide more structure and guidance to trainees developing research questions. I realized that I should not assume that medical students these days, impressive as they are, understand cultural influences that have taken me decades to even start to learn. I should provide better cultural orientation and statistical support to people I'm mentoring. And I should make sure that a mentor is readily available at all times when a mentee is working on a time-limited project. I must work harder ahead of time to confirm that on-site data and data management resources will truly be available. Building on how I benefited from my own mentors and improving based on ongoing experiences with people like Malini, I am learning to grow my own mentoring ability. Most importantly, I learned about resilience. Malini inspired me as I saw her reach far beyond her comfort zone, overcome major challenges, produce great research, develop deep relationships, and discover a new career direction.