

Bona Fides

Dr. Christine Aidala received her Bachelor's degree in Physics and Music from Yale University in 1999 and her Ph.D. in Physics from Columbia University in 2005. She is currently transitioning from a staff scientist position with Los Alamos National Laboratory to a tenure-track position in the Physics Department at the University of Michigan. Her recognitions include being a Distinguished Woman Physicist Colloquium speaker at the University of Connecticut, a recipient of the Sambamurti Memorial Award from Brookhaven National Laboratory, and a recipient of the Luise Meyer-Schutzmeister Award from the Association for Women in Science. She works in experimental high-energy nuclear physics, at the border between nuclear and particle physics. She presently researches nucleon structure and quantum chromodynamics, the theory of the strong force, as part of two relatively large international collaborations, working on the PHENIX experiment at the Relativistic Heavy Ion Collider at Brookhaven National Laboratory as well as the SeaQuest experiment at Fermilab.

The Foundations of a Physicist

I'm lucky enough to be the daughter of two lifelong learners, and I can hardly think of a more valuable gift to give someone than a love of learning. My mother received her Master's degree in accounting when I was a baby, and as a teenager I was proud and inspired to witness her go back later in life and get her CPA. My father is an aerospace engineer, and growing up my sister and I sat through many a dinner-table science lesson. Our budding intellectual curiosity was sometimes rewarded with longer-winded answers than we'd bargained for, but our expanding horizons never failed to lead us to new questions. Our parents cultivated diverse interests in us, many of which continue to play a role in our lives; however, there was evidently something special about physics, as my sister ended up a physicist as well!

Perhaps in contrast to many, one of the main reasons I was convinced that I was interested in physics as I went off to college was because I had found that I liked physics *despite* my high school teacher! Giving credit where it's due, however, even though I felt that I had a poor high school physics experience I sincerely appreciated the fact that my teacher recognized my abilities. Thanks to his nomination, at the end of high school I received an award from the American Nuclear Society.

Undergraduate Endeavors

I had an inspirational and highly challenging physics class my freshman year at college, taking the fifth-level intro course, "Intensive Introductory Physics." The class started with 35 students, and 18 of us stuck it out through the end of the second semester. We became a pretty tight group in several ways in spite of our diverse backgrounds. One of the things I never would have anticipated was heading to the gym every Wednesday after handing in our legendary problem sets to blow off steam playing "Physics 260 basketball" together! My sophomore year, I co-organized Friday pizza lunch lectures by faculty for undergrads (there was always good attendance by grad students as well because of the free food!). I continued the lunches through junior and senior year, and also expanded things to reinstate the local chapter of the Society of Physics Students, which had been inactive for more than a decade. Rounding it all out, I took the

initiative to revive the annual spring departmental picnic. Years later, after I'd finished my Ph.D., I was talking about where I did my undergrad, and someone asked me, "Wasn't the physics department very cold there?" I was taken aback by the question, since such a description never would have occurred to me. However, thinking back over my time there, it occurred to me that it probably was – or rather would have been – except that I made it otherwise. Organizing on the order of 20 talks by faculty per year over three years, I had interacted with just about every professor in the department. I had developed a very close relationship with the chair, who kindly provided financial support for the pizza talks and willingly expanded his support for things like the renewed department picnics when I offered to organize them. Of course, organizing so many activities within the department, I had also developed relationships with plenty of my fellow students.

It was very valuable to have sought out research opportunities throughout undergrad. I first worked in a lab the summer after my freshman year, at my home university. I applied to and attended summer research programs in different places each year after that, which were all well worthwhile. They gave me a taste of what a career in research would be, which bore very little resemblance to undergraduate lecture or lab courses. Spending each summer in a new place also exposed me to a variety of research projects and environments and certainly expanded my scientific social network as well.

Difficult Times

I did have some tough years after undergrad. I started a Ph.D. program immediately after I finished my Bachelor's and ended up going on leave shortly after the second term had started. The initial cause was some health problems, but I had been exceedingly unhappy there and wasn't motivated to go back after missing more than a month of classes. I had encountered a number of negative circumstances, in particular highly unprofessional treatment by certain faculty members. I learned the lesson that even faculty members are not beyond lying about departmental rules or exploiting a student's financial support. On top of that, I had begun working with a research group there the summer before I started. A postdoc was assigned to supervise me, and he told me flat-out, "Graduate students can't ask any questions." Looking back, it seems outrageous that I should have somehow accepted this, but he was dead serious, and if I tried to ask questions, he would turn me away, telling me to "think harder" and even to "stare at it longer." I had days when I would sit "staring" at my computer, with tears rolling down my cheeks, until the clock struck five and I felt I could finally leave, going home ashamed and depressed. So when I had health problems six months later, I didn't return to the university, and I ended up spending a year and a half in Italy, the home country of my then-boyfriend, now husband of 11 years, teaching English and music.

I had a lot of baggage as a grad school "dropout" throughout that period, carrying some of it with me well beyond. It's amazing to me to this day that my (now) husband stuck by me through all of it, given that we hadn't even been together for a year when my mental health started declining. But I slowly recovered and convinced myself that it had been the environment that wasn't right for me, not the goal of a Ph.D. in physics. I looked into doing my Ph.D. in Italy, but given the education system there at that time, they wouldn't recognize my Bachelor's degree. Redoing four years of undergrad didn't seem like a feasible option, but I knew I didn't

want to return to my previous institution, and I had missed the window to try to transfer to another program in the U.S. I decided to look for a temporary research position instead.

To my disappointment, several contacts from my undergrad days and earlier research projects failed to lead to anything concrete. But perseverance eventually won out, and I was fortunate enough to find someone willing to take a chance on me based only on my resume and a phone interview. I was hired for a 12-month research job at Brookhaven National Lab (BNL) working on one of the experiments at the Relativistic Heavy Ion Collider. I was certainly grateful, but I had no inkling, at the time, how that initial job would have such a tremendous impact on the next 11 years of my career and on my career-family strategy. During that temporary research position, I decided to reapply to grad school, only considering places involved in research at the collider and that were within a couple-hour “commute” from BNL. My newlywed husband, a software engineer, had found a job at BNL himself, and we didn’t want to move again after just a year. Time passed, and I ended up sitting in the same hallway at BNL: for that 12-month job, 3 ½ years after that to complete my Ph.D., a three-year postdoc stationed remotely from my employing university, a three-year named fellowship for Los Alamos National Lab (LANL), and I write this now six months into a LANL staff scientist position. I’ve had an office in the same hallway for 11 years, paid by four different institutions. In the meantime, my husband and I have had two children. Repeatedly negotiating to remain stationed at my large, user-facility-based experiment has offered geographic stability to my family despite the string of short-term positions typical for an early academic career.

Family Matters

I decided to start a family during the last year of my Ph.D. My personal situation allowed it – I got married in the first half of my twenties, and I figured that my Ph.D. years would be the most flexible period in my career for many years to come. With some students finishing in four years and others taking eight, what could somebody say to me if I took six months longer than I otherwise would have? In the end, I don’t actually feel that I graduated any later for having had a baby, since the idea of having a baby in “the last year of my Ph.D.” turned out to provide a much more meaningful deadline in my own mind than any generic notion of, “I should finish soon now.” I worked so hard those last few months, and I proudly defended the day before my son’s first birthday, completing all the Ph.D. requirements from scratch in only seven semesters, since the program didn’t allow transfer of credits from other institutions.

Knowing I’d have limited travel opportunities once the baby was born, I arranged to give a number of talks beforehand. One opportunity led to another, and to my own amazement, I ended up giving 18 talks in the 12 months before my son was born! A handful were conference and workshop talks, but most were seminars that I arranged. Giving a number of hour-long seminars before applying to postdocs worked out wonderfully – I got a lot of practice giving interview-style talks with none of the pressure of an actual interview! Plus, it was certainly excellent for networking. The year after my son was born I continued to be proactive in seeking professional opportunities but needed to look for more that didn’t involve travel. I feel that my biggest success toward that end was taking it upon myself to organize a local physics workshop, which I appreciated as a relatively rare opportunity while still a grad student.

I'd be remiss not to mention how wonderfully supportive so many colleagues were during the period after I had my son, with only one (albeit stark) exception. Working in a collaboration of >500 people, it was touching that just under 100 of my collaborators took the time to send me personal e-mail, a card, or a small gift when my son was born. My Ph.D. supervisor was extraordinarily flexible regarding my schedule, and the senior faculty member in my thesis group caught me by surprise with his genuine excitement. I recall that he spontaneously declared, "This will be a first for the Department of Energy group!" I found it an amusing and unexpected way to look at my pregnancy as a grad student, but I welcomed his unambiguous expression of support.

I had my daughter halfway through my three-year postdoc, which was definitely more challenging, in part because of the fixed-term contract, and in part because of some general tensions felt during that time. She was a more difficult baby as well, and of course at that point we had not just a baby but a baby plus a toddler. I was getting more invitations to travel, most of which I was reluctant to give up, but it was quite difficult for my husband to handle both children while I was away. It took a few months, but it finally occurred to me to try to take the little one with me. She ended up coming on six professional trips with me before she turned one. Usually I had the person who invited me help me to find local childcare, and for one workshop my mother was kind enough to take a week off from work and travel with me to watch her. It was a totally exhausting year, but we made it through, and it's gotten easier since then.

Making Choices, Settling Down

I find myself at a pivotal point in my career: about to move from my LANL staff position to a tenure-track faculty position at the University of Michigan. Working remotely for LANL, stationed at BNL, has been an excellent career opportunity for me and has been great for my family, but it was never really a long-term career option. I've known for several years that my preference would be to work at a university, with opportunities to teach and mentor junior colleagues in research. On top of that, being from relatively urban areas, and with all of my husband's family still in Europe, we felt that moving out to Los Alamos wasn't the right solution for us geographically. So I've been on the job market for faculty positions, and it's certainly been an emotional roller coaster as I've posed time and again the question, "Where could we all be happy?" I turned down my first tenure-track offer five years ago because the timing wasn't right to move my family and then an exceptionally flattering unsolicited offer the year after. Declining offers for tenure-track positions to sit in temporary ones was nerve-wracking, to say the least. I received all my offers serially, so each time a decision had to be made without knowing what opportunities might arise – or not – in the future. I made an earnest effort to pin down the matrix of personal and professional compromises I'd be willing to make, and I became much more selective about where I applied. I have great optimism that UMich and Ann Arbor will finally provide the long-term solution for which I've been searching, and it's extremely gratifying to see that years of hard work, compromise, and patience have brought me here. So it's a perfect point to take stock and reflect on how I've reached where I am and the people who've supported me so much throughout the years. I feel that true success is achieving happiness, which I know I won't fulfill unless I'm actively making both the personal and professional aspects of my life work. So, (fingers crossed!) . . . I think it's been worth the wait to settle into the right long-term position for me!