

MoMath: *Building a New Museum*



Cindy Lawrence
Honors Scholar, Class of 1988

When I was in elementary school, maybe in second grade or so, we returned from a long summer vacation to a back-to-school test on long division. Much to my dismay, I'd forgotten how to divide during those long idyllic days spent laying on the grass watching the clouds roll by. I was mortified, but determined to recover, and recover I did. Math soon became a strength—something I was really good at. But I didn't start to really love math until my senior year of high school, and my first experience with calculus. I was stunned by the beauty I saw as I explored. Math was no longer just memorizing lists of rules, but suddenly was a discovery of amazing patterns, of elegance—a world I'd never known existed. After a year spent devouring all I could on the subject, and with my precious calculus notebook in tow, I arrived at UB as a math major during the summer of 1984.

The realities of the real world soon set in. What would I do with my life as a math major? What sort of jobs were there? I didn't want to be a math teacher, nor an actuary—what else was there? For one reason or another, without much real thought, I slowly drifted away from math, graduated with an accounting degree, and started my career as a CPA with a large firm in Manhattan.

Cut to the future, twenty-one years later I've managed to combine motherhood with a career, landing a teaching and editorial position with a large national CPA review firm. It's a job I enjoy, a nice blend of intellectual challenge, of helping others, and of working with a great team around the country. It also offers complete flexibility, as I work primarily from a small office in my house, set my own hours, and manage to find time to volunteer in my kids' classrooms, and to chauffeur them around to music lessons, school activities, and the like. I'm happy with the balance I've achieved.

During my years spent focused on my kids, though, math

was never far away. From the time my first child was a toddler, we played with math, and I was delighted by the ease with which he managed to grasp concepts. He, and later each of my two daughters as well, would be selected to participate in a competitive program for gifted math students—a wonderful one, but limited in duration—each child may participate for just one school year, and then must exit to make room for others. This was my entrée into a new mathematical community—a community consisting of parents whose kids loved math. I watched as my kids flourished in an environment of academic challenge that they had never before experienced in their regular public school classrooms. In an effort to continue this experience for them, I soon found myself running an extension program of sorts, for gifted math students, in conjunction with Brookhaven National Laboratory.

One day, a parent from the gifted math program, Glen Whitney, approached me to tell me that he'd be opening a museum of mathematics. I was immediately entranced by the idea, and quickly offered to help. What could be more fun—a way for me to personally connect with math again and maybe, to encourage other kids to develop a love of math, as I'd done with my own kids. After attending the first few organizational meetings, a turning point arrived. Having been invited to participate in the 2009 World Science Festival, Glen was looking for someone to spearhead the effort to create a math booth. It was a one-day event, and though I was busy with my own job and my kids, a one day effort seemed reasonable. I volunteered.

Little by little, I became more involved in the project, and I quickly realized that Glen's vision far outstripped my expectations. We would be opening America's **only** museum of mathematics, and the World Science Festival would be our debut event—a proof of concept of sorts. Could we build something that people would enjoy? I also soon realized that the scope of Glen's expectation for that day was grand—I'd been expecting to man a booth and hand out brochures

or perhaps pencils; he had in mind a booth filled with the hands-on interactives that would become the hallmark of our organization. We put out a request for proposal, for an exhibit design firm to help us build a 1200-foot traveling exhibit. Neither of us knew that traveling exhibits are typically built during a span of years, and we had just five months until the Festival. Ignorance is not always a bad thing—so onward we forged.

Enthusiasm for the project ran high. George Hart, a professor of computer science at Stony Brook University and a self-identified “mathematical sculptor” (who knew such a thing existed?) was a driving force from early on, and Tim Nissen, a designer hired as a consultant, rounded out our team of four. Despite working practically around the clock, and pulling all-nighters for the first time since finals week at UB, I was energized and excited to be working with Glen, George, and Tim—a team whose innovation and creativity was unlike anything I’d experienced before.

On June 14, 2009, the *Math Midway* (mathmidway.org) made its debut, but the 1200 square foot booth we’d planned, by sheer force of unbridled enthusiasm, had expanded to become a 4500 square foot traveling exhibition, filled with more than twenty interactive, hands-on math exhibits. As thousands of people poured into our space that day, they proved that math could be exciting, engaging, and fun—and gave us the impetus to continue on full force with the project. While the *Midway* began its travels around the country the four of us turned our attention to the larger project, building a museum: the Museum of Mathematics (momath.org).

Now, two years later, the *Midway* has been to New York, Pennsylvania, Texas, and California, and will soon be headed to Ohio, Maryland, and Florida. And while the *Midway* tours the country, here in New York, we’ve expanded to a staff of thirteen, rented space on the north end of Madison Square Park, and been written up in various papers and online blogs, including the *New York Times*, the *Wall Street Journal*, *New Yorker* magazine, *Forbes*, *Crain’s New York*, and even the *Buffalo News*! And although we don’t plan to open until 2012, we’ve already begun running programs for teachers, students, and the general public. We’ve given

math tours in Manhattan and in Washington, D.C., engaged local companies with interactive lunchtime presentations, and worked with groups of local students to enhance the perception of math as a vibrant and growing field. Our free public lecture series, *Math Encounters* (mathencounters.org), designed to communicate the richness and excitement of math, showcases unusual and engaging areas of mathematics, and routinely fills to capacity each month. Enthusiasm for the project runs high—not just because we are building a neat new museum to add to the cultural scene in Manhattan, but because math really matters. In the face of declining US math scores, our nation faces a crisis: we have thousands of good jobs going unfilled each year, because the pipeline of mathematically competent US graduates is drying up—and places like the NSA, or Raytheon Corp, or any number of other defense-oriented companies, can only hire US citizens for many of their positions. Creating a place where our nation’s students can come to get excited about mathematics suddenly takes on a new importance. Kids will be able focus on the areas they enjoy, creating a place where math is fun, while letting kids know that math majors can have a whole variety of exciting careers. This is one small way we can contribute to solving what has become a serious national problem.

Meanwhile, Glen, Tim, George, and I have all left our previous positions to focus full time on the project, and we are well underway designing what I hope will be just about the coolest museum ever—a place where math lovers and math phobics alike can see what math really is: not an endless series of incomprehensible rules, not a subject where all the discoveries were made years ago, but a subject that has an aesthetic and creative beauty all its own, and one where exciting new developments occur every day. We want to create a place that embodies the spirit of that first calculus class I took—a place where people can be surprised, and entranced, as I was, by the incredible beauty inherent in mathematics, and where kids and adults alike will leave with a new appreciation for the wonders of mathematics.)

Cindy Lawrence is the Chief of Operations of the new Museum of Mathematics.



The debut of the Math Midway.



The “team” (from left to right): Cindy, Tim, George, and Glen.