Nicole Snyder
Georgia College & State University

A Life of Multitudes
“Chemistry major, with a dance minor!” This answer to that age old question of “What’s your major?” is always met with first surprise and then the follow-up question: “What are you going to do with that?” On the surface I understand—the two do not exactly go hand-in-hand. The world of the lab and the studio could not be more different. In the lab I need to be exact, I need to know my amounts and be confident in every move I make. The dance studio could not be further from that. Every moment in the studio I am playing with risks and moving in ways I would not normally consider. Being a “dancing chemist,” as some of my friends call me, has taught me valuable lessons that I can take from the studio to the lab and vice versa. Dance is not an easy discipline; it takes internal motivation and endless drive to continue improving. Dancers must be able to think on their feet, to solve problems in the moment, to push their limits, and know their space without a fraction of a doubt. Dancers have to be filled with passion—passion for life, for creating, for sharing, for working. I did not know how much being a dancer would impact being a chemist, but now I know the two are intertwined in countless ways. My years in the studio color my future years in the lab in bright hues of creativity, of drive, of excitement. My years in the studio make me the chemist I am today, and the chemist I will go on to become tomorrow. But ultimately, none of this would be possible without the support and drive of a liberal arts education.

One of the biggest benefits of a liberal arts education is the emphasis on taking knowledge gained in one field and expanding it to other areas of your education. In my chemistry classes as we look at reactions and their various mechanisms, I am reminded of dancers moving across a stage, reaching for each other, or breaking away in stunning patterns. The flow of electrons as they move through resonant structures mirrors the flow of movement a choreographer might use to create different visuals within the same formation. Wherever I turn, I
am surprised to find my two passions correlating in ways I did not expect. My professors have been key in pushing me to explore those connections, whether it is producing a research proposal that incorporates dance or creating movement based on my time in a lab. They understand the benefits of being a student who has a breadth of knowledge across many fields and a depth of knowledge in one’s passions. My research mentor takes advantage of this breadth of knowledge during one of my favorite volunteer experiences: Chemistry Magic Shows.

Dr. Lisse organizes a program called STEMming into the Community that takes students from various disciplines and goes into the surrounding impoverished areas to help make science a little more accessible. Volunteers range from biology majors, art majors, chemistry majors, and more. The program sets up hands-on activity tables, mini demonstrations, and—my personal favorite—Chemistry Magic Shows. I have worked closely with Dr. Lisse for four years now, putting on magic shows and exposing children of all ages to the wonders of science. It did not take long for Dr. Lisse to find out about my passion for dance and decide I was the perfect volunteer for the inertia wheel. The premise of the demonstration is simple: a volunteer stands on the inertia wheel holding a five-pound weight in each hand. They hold their arms out and with a gentle push they start spinning. The inertia wheel will continue spinning until stopped, and the volunteer standing on the wheel changes their center of gravity by closing their arms which causes them to speed up, or opening their arms which causes them to slow down. When you have been dancing for 18 years, you are no stranger to maintaining your balance while spinning, a fact that Dr. Lisse quickly found out. Within my first few magic shows it stopped being a question of if I wanted to demonstrate the inertia wheel, but when I wanted to demonstrate it. Over the course of 4 years, I have done the inertia wheel so many times that we had to start warning students that I made it look easy but was just adept at shifting my own center of balance to
counteract the torque generated from closing my arms so quickly. That ability is one that comes from years in a studio learning how to pirouette, and now serves a much different purpose than ever intended.

While it seems that dance has mostly changed me as a chemist, chemistry has changed me as a dancer too. During a dance composition class, we were challenged to create a dance that embodied chaos. When I think of terms such as order and chaos, my thoughts turn to entropy. As I started building my piece, I asked myself, “What increases the entropy of a reaction? What does it look like to embody those ideas?” I settled on the idea of increasing the amount of something, like looking at which side of a reaction equation has more moles of substance and being able to predict the change in entropy through that. As I choreographed the piece, I started small, just one arm moving. I gradually added in a leg, my other arm, my foot, and finally every part of my body was moving in its own way. After I performed the piece for the class, my instructors asked me to share more about my inspiration. While explaining the concept of entropy in chemical reactions was not what they expected, nevertheless they were encouraging of my unique perspective. I had built a piece that tended towards disorder, which used my knowledge gained in a different discipline to highlight a viewpoint others would not have considered. From that point on, my dance instructors continued to push me to keep using my scientific background to bring different meaning to my work.

As I approach the end of my senior year, I am often reminiscing on the various opportunities and situations I have found myself in over these four years, and the countless ways my two passions have collided. Much like a chemical reaction requires the correct orientation to form a product, I needed an education that would put me in the correct environment for my passions to merge. A liberal arts education not only provided that but surrounded me with
professors who were willing to embrace every facet of me as a person and understood there was more to the story than the subject currently being taught.