

# MUSICIANS IN PART-TIME EMPLOYMENT

## MUSIC AND SCIENCE AS PARALLEL PURSUITS OF TRUTH AND BEAUTY

Aaron Tan

I ENCOUNTER a wide gamut of reactions when people learn that I am both a professional scientist and a fairly busy musician. Some appreciate my attempts to straddle both worlds, while others respond with indifference. Still others tell me that I need to make a choice, or else I will be unable to excel in either field. After all, I can only physically do so much with the 24 hours that I have each day. Nevertheless, music is such an integral part of my life that I do not consider it to be simply a hobby or part-time job: it is something I care about as deeply as my main profession. And while on the surface my life as a scientist may seem to have little relevance to my activities as a musician, at their core, the two share something very much in common: in a sense, they are both pursuits of truth and beauty. While each comes with its own set of challenges, I am grateful for the tremendous amounts of intellectual and emotional satisfaction derived from the rich and complementary natures of these two fields.

I fell in love with organ and sacred music somewhat late; even though I had been a church musician since I was seven, my first experiences with the organ came only when I was an engineering freshman at the University of Toronto. My formal training on the instrument began when I was awarded the Toronto RCCO's Barwell Piano Student Scholarship. I was introduced to the wondrous realm of liturgical music and worship through my first teacher, John Tuttle, and the Evensongs at St. Thomas's Anglican Church, where he served. Although I had been a fan of classical music since I was young, I had never made the connection that beauty could be a part of worship alongside good theology and teaching. The deep, thought-provoking masterworks I studied and heard were a stark contrast to the medleys of gospel-

style hymns that I had been playing at my own church. These experiences have shaped my aesthetic and philosophy of church music to this day, and have helped me find a personal voice for my expressions of praise to God.

While music and the arts are human creations of beauty, the natural world around us is equally awe-inspiring. We readily think of celestial bodies and landscapes as being beautiful, but beneath what the eye can see is a microscopic grandeur and complexity. In particular, my current research investigates the properties of polymers (commonly known as plastics) on the nanoscale. During what is often a grueling pursuit to understand the complexities of nature, I sometimes pause to reflect on the elegance of the systems I study, and on the daunting task of elucidating their hidden secrets. Although my work represents a small drop in the ocean of scientific research, it is thrilling nonetheless to participate in the ongoing global-scale endeavor of humanity to better understand the material world in which we live. I am excited when I witness brilliant minds every day coming up with new research ideas and interesting questions. Collaborating with my colleagues often provides motivation for me to make my own discoveries.

As inspiring as music and science can be, there are times when the burden of making progress—or the desire to make a difference—can become overwhelming. By the end of my doctoral degree, I would have seriously thought of quitting both disciplines. At times, my research efforts seemed fruitless; the problems encountered in my experiments appeared insurmountable, and the very things that had fascinated me became a source of anxiety. In my darker moments, I even found little solace in music: my playing seemed bor-



Aaron Tan in the lab

ing and mechanical. Even though I was successful in the organ competitions I entered and actually had a busy concert schedule, I felt my playing lacked inspiration: I was technically quite facile, but something was missing. Perhaps I was turning music into an analytical exercise, subconsciously allowing my rigorous scientific mindset to permeate my playing.

A turning point came in summer 2012, when Joel Hastings, a good friend and colleague, invited me to go to Poland and study piano with him at a music festival. Even though I had not played piano for more than ten years, I accepted his invitation on a whim. Joel's teaching was completely revelatory. The goal in our work together was to make each note as beautiful and meaningful as possible. He reminded me that I needed to truly love whatever music I was playing at the moment, and to communicate this affection to the audience. After Poland, I found the inspiration I had lost for both my playing and my research. In my music making today, I play with a different mindset, seeking not just to be accurate and elegant, but also to share with others the sheer joy that music brings me. After I graduated, I joined a group in my primary field of interest, polymer research, and have wonderful labmates to support and enlighten me.

I have learned that being utterly passionate about what one does, along with having the tenacity to work hard, is necessary for setting and achieving goals. Having experienced moments of musical transcendence, and desiring to impart a similar feeling to others, drives me to continue making music despite the physical challenges of juggling two worlds. Being a postdoctoral researcher leaves few hours in the day for me to be a serious musician, and there are some sacrifices that I must make. When I tell people in my research group that I am going on "vacation," most of the time I am actually participating in a competition, performing a concert out of town or at an organ convention.

How do I manage to remain active in two very different fields? Over time, I have



realized that I engage in occasional bursts of effort in each one. I recall that early in my doctoral years, I got up every day at 5:00 A.M. for about six months and heading straight to the music school to practice Bach trio sonatas for three hours before heading, fairly exhausted by then, to the lab. Other times, I would not practice for weeks on end, spending twelve hours a day doing experiments in the lab. It was usually deadlines—for competitions, concerts, and journal articles—that triggered a shift in my focus to the other field. In a way, though the subject matter changes, my efforts remain the same: I do not see a large difference between struggling for a year in the lab to achieve one successful afternoon's worth of good data, and practicing a Reger Chorale Fantasia daily in order to perform it twelve months later. In either case, the prize at the end is worth all the effort, and sometimes the journey itself is also quite enjoyable!

When someone asks me to choose one field over the other, all I know is this: If I quit playing music, I will miss being able to create intensely emotional experiences and to share them with others; if I quit doing science, I will miss coming face to face with the complexity of nature and being around people who are fascinated by it. In the end, it is the eternal search for truth and beauty that compels me. Science directs us to look outward for understanding, while art invites us to look within for answers. Both are awe-inspiring and vital to humanity. I am thankful for the opportunity to partake richly in two worlds and hope to continue along this happy path for years to come.

**Aaron Tan** is the winner of the 2013 Arthur Poister Competition in Organ Playing. He also earned a PhD degree in materials science and engineering. Currently a postdoctoral researcher at the University of Michigan, he also concertizes on both the organ and piano, and serves as organ scholar at St. John's Episcopal Church, Detroit, Michigan, working under the direction of Huw Lewis. He is a Fellow of both the Royal Canadian College of Organists and Trinity College of Music, London, England. You can learn more about his music making by visiting [Aarontan.org](http://Aarontan.org).



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