

Passion and Determination Are the Genesis of Research

Suet Nee Chen

In life, materials will decay over time, what is left in you is Passion. I might as well take a chance and do what I love.

—Suet Nee Chen

Impaired Vision Motivated My Interest in Science

When I was 6 years old, it became clear that my blurry vision was not a “little problem.” My parents sent me to an ophthalmologist who made the diagnosis of severe myopia (>-6 diopters [D]). Since then, my glasses have progressively thickened. By age of 13, my myopia had worsened to -10 D. The ophthalmologist advised my father that I should not stress my eyes and must avoid intense physical activities. Unfortunately, this included avoiding Olympic handball, which was my passion at the time. The concern was that a severe hit to my eyes could cause retinal detachment. When I heard the recommendation, my eyes welled up with tears. Either I had to stop playing the sport that I loved or risk going blind because of trauma. My father did what any loving parent would do. He said: “My child, please be happy in life and be whoever you want to be. You have my full support.” Despite the risk of losing my eyesight, my father supported my decision to continue playing the sport that I loved. I eventually became the team captain of the Olympic handball team of my home state.



To reduce stress on my eyes, I developed a habit of observing nature with a hand-held magnifying glass. I loved walking around our tiny garden and looking at insects sipping the morning mist on the plants. It was exciting and interesting to observe the detailed movements of the insects. This is how I first experienced the wonder of scientific observation. I enjoyed viewing the refraction and dispersion of light in the morning mist, forming tiny rainbows in my little garden. I developed a fascination in the spatial arrangement of molecules and found that science held many answers to the questions that captivated me the most. After graduating from high school, my father sent me to United States to pursue a college degree in chemical engineering. I became serious about research while I was a senior in college.

Research Intertwines With Personal Life

One summer, at age 30, I decided to become a certified open water scuba diver. By this time, my eyesight had progressed to -19 D and walking around on land without my glasses was akin to diving without a face mask. A poor eyesight is a serious problem for divers because underwater communication is based on hand signals and gestures. In reflecting on my scuba



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From the University of Texas Health Science Center, Houston, TX.

Correspondence to Suet Nee Chen, PhD, University of Colorado Denver Anschutz Medical Campus, Denver, CO 80045. E-mail suet.chen@ucdenver.edu

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diving experiences, I realize the similarities between scuba diving and pursuing a career in research. Scuba diving required that I manage numerous skills simultaneously, such as equalizing my ear pressure, keeping track of my diving buddies, avoiding underwater currents, clearing my mask underwater, breathing slowly and continuously, maintaining neutral buoyancy, controlling my depth and remaining air. No wonder I felt challenged all the time!

Similar to scuba diving, building a research career has depended on my ability to multitask, to remain determined, and to persevere until my experiments are completed successfully. After finishing my PhD dissertation, I took a research position at Baylor College of Medicine (mentor: Dr Ali J. Marian). I learned how to cope with pressures both in the classroom and in the laboratory. I also learned how to help colleagues with their experiments, remain focused on the research aims, complete tasks with precision, keep accurate lab notes, and attend to my own wellness in spite of being extremely busy.

Cultivate and Nurture Your Passion

In moments of self-doubt, I've asked myself, could a visually impaired person be a scientist? Science is difficult and competitive. It can appear incomprehensible even to those with normal eyesight. Scientific observation requires data analysis and image acquisition using precision instruments. Visual impairment presents a problem and can make scientific life much more challenging. Research involves hard work, tedious planning, numerous experiments, and coping with rejections, whether manuscript or grant proposal rejection. Although 90% of the time I feel challenged, I find it extremely exciting when a paper is accepted for publication. Despite all

frustrations during the process, publication of the discoveries is immensely rewarding and intellectually fulfilling.

At times, I have the same feeling about exploring my research data as when I am surveying the ocean floor. Once, while scuba diving, I lost my focus and descended 30 ft below the surface into a completely dark area. Instantly, I felt my breathing got heavier and my heart pumped faster and louder. My calm logical thoughts gave way to panic. A true panic attack is a major cause of death in scuba divers. Fortunately, I recovered, took a few deep breaths, and regained my calmness. I started to look around and focused on controlling my breathing. I swam toward the slightest light source that I could see. I swam upwards and was able to unite with my scuba buddies. We continued our exploration and reached an area with clear and blue water, full of beautiful reefs and unique sea creatures. It was extremely rewarding to be able to swim with fish. In spite of that moment of fear and confusion, the experience was absolutely fantastic and was worth living for. I undergo similar excitement when I have a breakthrough in my research.

In research, I occasionally feel lost and disoriented. In those moments I know that I have to push myself hard to move forward because at the end, the results will be intellectually rewarding. Will I be like Galileo Galilei whose vision started to deteriorate when he was 68 years old and eventually became totally blind? For now, the answer to this question remains out of my focus. Meanwhile I remain most passionate exploring the scientific world and making observations above and below the waterline.

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