



to do. I felt useless and terrified.” While it is true that long sentences can provide the structure for complex descriptions, short and simple sentences are effective in conveying powerful emotions.

Timothy’s essay uniquely bounces between the terrifying and distressing scene in the emergency room and paragraphs about Tyson’s hard work and life philosophies. Timothy writes about both with vivid detail and heartfelt sincerity. The interludes where we learn about Tyson’s struggles help alleviate the emotional intensity of the situation.

Though death is often avoided as an essay topic in the U.S., Timothy writes about it with dignity and grace. In revealing that after age six, he never cried, “no matter how much I was mocked about my clothes, or my ethnicity,” Timothy shows us that he, like his brother, also faced challenges as an immigrant. This intimate fact also crystallizes Timothy’s grief when his brother dies. Amazingly, Timothy is able to end the essay on a strong and optimistic note (just as Sarah does), one that highlights his love for his family and his perseverance in the face of adversity.

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## **“A Summer of Stem Cells”**

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**MIT**

“IT APPEARS ALL YOUR CELLS ARE DEAD.”

Only shock prevented the tears from streaming down my face. My cells were dead. After being accepted into the competitive Stanford Institutes of Medicine Summer Research Program (SIMR), and spending approximately 170 hours of the past month manipulating human embryonic stem cells (hESCs), I was back to square one—with only one month of my internship remaining. How in the world was I going to make up for lost time?

As I asked myself the question, I thought back to exactly how I had spent those 170 hours, working to develop the stem cells which now, under the microscope, were hollow with the absence of life.

I started my internship a little overwhelmed by the fancy hoods, automatic pipettes, and high-speed centrifuges. But by the first of the 170 hours, I had familiarized myself with the equipment and begun my quest to find the function of PRDM1—a gene thought to control replication in hESCs. First though, I needed to make a growth medium for the hESCs. I painstakingly measured to the ten millionth of a liter,



testing the accuracy of each measurement multiple times before finally dispensing it into the medium solution. After I had plated the hESCs on my new medium, I waited with bated breath for the results.

To my joy, two days later, my cells were thriving and even outgrowing their new home. Known for their ability to quickly replicate, it was logical they would need to be frequently transferred. The difficult part was that, as part of my experiment to find the purpose of PRDM1, I had different strains of hESCs (some serving as “control” strains) which could not be mixed. Transferring hESCs is a process requiring great concentration and coordination. It took me about three hours the first time. By the end of the month, though, transferring was second nature and my cells were doing well—I had inserted a fluorescent protein into their DNA to verify the hESCs containing the resistant vector were living, as hypothesized. I had successfully created hundreds of stable hESC colonies of different strains. Everything seemed to be going so well . . .

But now was not the time to reminiscence. I snapped out of my daydream and refocused on the situation at hand.

“Ariela? I know taking the news the first time can be hard, but keep in mind, you probably didn’t do anything wrong. You know how sensitive they are . . . this sort of thing is common when working with stem cells.”

“I know,” I said, smiling genuinely this time, “I’m ready to try again.”

My project was not completed by the end of the summer, but through hard work, I was able to replicate parts of the experiment to produce valuable data. Although the experiment did not go as planned, I am proud of myself for persevering. As Thomas Edison said, “Our greatest weakness lies in giving up. The most certain way to succeed is always to try just one more time.”

## ANALYSIS

“A Summer of Stem Cells” uses lively dialogue and careful detail to show us how Ariela responded to a major setback during her summer research at SIMR. The introduction, “It appears all your cells are dead,” is gripping and mysterious. We subsequently learn of the astonishing 170 hours Ariela has devoted to her research project with human embryonic stem cells. Ariela’s colloquial tone serves to draw readers in so that we sympathize with her plight. We also wonder how