



## **“My Unpopular Decision”**

---

**Shiv M. Gaglani**  
**Harvard University**

SINCE I HAVE ALWAYS BEEN INTERESTED in science and technology, I subscribed to many research magazines, including *Popular Science* and *Scientific American*. However, until 10th grade, I never had the opportunity to contribute to medical research—something that I had always wanted to do. Then, one day I read an article titled “Print Me a Pancreas, Please” in *Popular Science*, which described novel tissue engineering research involving modification of off-the-shelf inkjet printers to print out living cells in a “bioink” solution. Having read much about tissue engineering, I realized this “organ printing” approach could potentially address problems of traditional tissue engineering methods, such as the need to precisely place specific cell types in 3D scaffolds. I was so excited that I came up with a few ideas of my own about advancing the printer capabilities. I was impelled to contact the researchers at the Medical University of South Carolina (MUSC) and Clemson University (CU).

I corresponded with the professor at MUSC and visited his lab multiple times, but realized that the actual printers were kept at CU. Therefore, I contacted the researchers at CU, who did not reply to about 50 of my e-mails. Not the one to give up easily, I called the Principal Investigator (PI) and expressed my eagerness to contribute to the research. After seeing my resumé and computer-aided designs (“Roadmap to Organ Printing”), he invited me to meet him at his lab on October 18th, which conflicted with my school’s Homecoming dance. To my friends’ bewilderment I made the “unpopular” decision to miss the dance. They could not understand why I preferred driving 26 hours to meet a researcher and miss all the fun at the once-a-year dance. To me, this was clearly the right choice. I was trading a great school experience to literally get my hands into cutting-edge medical research.

The PI was so impressed with my original CAD designs (“Roadmap to Organ Printing”) and my resume that he invited me to research at his lab. Over Christmas and other school breaks, I learned many laboratory techniques, conducted novel research, and independently succeeded in “printing” the first functional 3D branching tube of smooth muscle cells (a rudimentary blood vessel). This research helped me win many



science competitions and honors, including 2nd Place in Medicine and Health at the Intel International Science and Engineering Fair and become the Top Florida Presenter at the National Junior Science and Humanities Symposium. My computer-aided designs were published in *Biomaterials Forum* and the *Journal of Thoracic and Cardiovascular Surgery*.

This remarkable experience inspired me to perform many additional research projects and I consider it a turning point in my life. It has increased my passion for research and my determination to be a physician and work on devices or pharmaceuticals that improve people's quality of life. I have also become more confident in my research efforts and am able to contact any researcher to pursue a position in their laboratory. I have realized that there are many opportunities for students like myself to contribute to labs and brainstorm solutions for current problems.

### ANALYSIS

Shiv demonstrates motivation and drive in this essay about his passion for research in science and technology. Many essays about academic interests focus on schoolwork or extra-curricular activities such as Science Clubs or math competitions. Shiv's story deviates from the norm by showing how "academic" interest is also a passion in his free time—the references to *Popular Science* and *Scientific American* illustrate this hobby. The most unique element of Shiv's story is his bold initiative in contacting the researchers at MUSC and CU after reading the "Print Me a Pancreas, Please" article. Shiv writes about his response to this article in concise, clear terms. "Having read much about tissue engineering, I realized this "organ printing" approach could potentially address problems of traditional tissue engineering methods, such as the need to precisely place specific cell types in 3D scaffolds." While somewhat complex, the ease with which he uses terminology demonstrates Shiv's familiarity with the topic.

The second paragraph of the essay presents many small but delightfully informative details that show Shiv's determination in pursuing research. We learn that he sent 50 emails to researchers, then, undaunted by the lack of a response, called the PI and arranged a personal meeting. He drives an astonishing 26 hours to meet the researcher, and "made the 'unpopular' decision to miss the dance." Shiv's resolve is clear: "To me, this was clearly the right choice. I was trading a great school experience to literally get my hands into cutting-edge medical research." These details distinguish Shiv from his peers.