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September 04, 2019

Michael Coppola
160 Convent Ave, Shephard 73
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Dear Mr. Coppola,

I am writing a formal introduction of myself to you. This is my second year of college and I have started my studies in this institution with the goal of pursuing a career in science, alongside, I have the intention of becoming a successful college professor. With this goal in mind and a lot of interest in the many fields of science, I am hoping to finish my college with a good grade in the science background and follow the course of studies till I have done enough research and fruitful experiments that will eventually put a PhD after my name. The reason I have been only using the term "science" in general, instead of any specific fields, is because currently I am struggling to decide whether to pursue, biology, chemistry or a more unique subject, atmospheric science.

To begin with, genetics and the fact that we are now capable of manipulating genes according to our needs, have been the driving force for me to pursue a career in biology, more specifically, biotechnology. Using biological entities as form of technology pulled me towards this subject. When I first started learning biotechnology it was back in my country, Bangladesh, where I studied two years of college, which I had to leave as I moved to USA. The subject, at that time, was new at my college, not only the department was struggling to find teachers experienced on the field, but also, the applications of the field outside was very small and under developed. My plan was, that by the time I get a Master's degree in Biotechnology, there will be sufficient progress in the country and many areas will open up to apply biotechnology. However, I had to leave the plan and my progress and had to move to USA, where I believed the field of biotechnology. One particular incident after coming to CCNY caught me by surprise when I was trying to get my credits from Bangladesh transferred, one of the representatives from the admission department, said that CCNY did not have Biotechnology. I had to show the college website for biotechnology to prove it. I had a conversation with the chair of the science department about it, and she pointed the lack of communication between the departments of college, especially with the department that handles transferring of credits. Nonetheless, Biotechnology has great potential as with our climate change, we will need to develop different ways to produce food, medicine and health treatments. Through biotechnology I have the option to pursue any of those problems. For example, I believe that lab grown meat, without the presence of farm animals, can be a more environment friendly solution as currently our agricultural practices bears the largest carbon footprint. For medicine and health, there is the field of

stem cell research and gene therapy which are also branches of biotechnology. Therefore, I find biotechnology as a field with countless possibilities and all of them are very intriguing. Biotechnology as a major has always been my first choice until my grades start to say otherwise.

When talking about grades, I am good in Chemistry. It is easier for me to understand the chemical reactions than memorizing the structure of cells and my course results thus far has proven it. In addition, chemistry is linked to biology in many different ways, since organic chemistry, also known as, biochemistry encompasses the largest part of the field other than its inorganic counterpart. Furthermore, application of chemistry is very rich, such as the production of all types of chemicals which is used in medicine, toiletries, building materials etc. Many biological studies and applications also require deep knowledge in chemistry which is why there are number of courses from chemistry which are taught in biology. In physics, chemistry is also important, for example, making dry cell batteries and developing coatings for materials to keep them from rusting. One of my teacher's from back in my country used to say, that in science, chemistry is the safest field to get a job, which I did not doubt, especially for the case for my country. This is also true while I am studying here at CCNY, if I find facing a wall in any of the majors in science, I am going for chemistry, more specifically biochemistry.

Finally, to the part I have found recent interest in, Atmospheric Science, more accurately, the data analysis of the weather systems, which includes, prediction through algorithms, mapping and providing better weather forecasting. This recent development happened over the summer. I came across an audiobook called, The Coming Storm by Michael Lewis, where the writer explores the danger of deadly storms, and necessity for better forecasting which can save millions of lives. He also emphasizes that our current government is turning a blind eye towards the importance of federal weather forecasting services. This book kindled my interest in Atmospheric Data Science when it shed light on how much data the National Oceanic and Atmospheric Administration gathers, runs through algorithms and provide the weather forecasts that we see on our smartphone screens. All the weather apps, such as, AccuWeather, get their data from the NOAA, without which there would be no possible predictions of the weather. I found it especially amusing, when I found out that some companies show forecasts for 10 days or ahead, which is not correct half the times since the weather models generated by our current technology loses its 90 percent accuracy when measured over 5 days, and by the 8th day it becomes less than 50 percent reliable. Regardless of our current capabilities, it is inescapable that weather forecasting is very important, as day to day to lives are linked to the weather predicted, for example, a coffee shop will have more ice in stock, if the following few days' weather forecast shows high temperatures. Furthermore, weather forecasting is most important when predicting storms and floods, where and when it will happen, what areas will be affected at what rate. These forecasts ensure the evacuation of the people from those places and help the emergency personnel to take preparations to respond as fast as possible after the storm. All these have piqued my interest in studying weather data analysis, where I hope to participate in the advancement in our weather forecasting technology so that we can predict weather better and save lives.

Certainly, choosing the major is the first step of a great journey to our future goals and my aim is to become a college professor. I love both research and teaching and I believe a university is the best place to practice both at the same time. Therefore, after doing my bachelor's, I will be looking forward to doing my master's and a successful PhD.

Finally, I believe that you will find me very interesting as a student and I will be enjoying this course under your guidance and learn few interesting ways to write, especially in the fields of science.

Yours sincerely,

Sadman Shawraz, Student, The City College of New York