

**Final Reflection on
My 2020 Summer Enrichment Experience
at the Stanford Pre-Collegiate Program**

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With the support of the Garwin Family Foundation, I was able to participate in a two-week online learning program this summer with Stanford Pre-Collegiate Studies (SPCS). I attended a course called: “Astrochemistry: Origins of Life in Space”. In class, we learned how astronomers find and study distant planetary bodies and discussed conditions necessary for those bodies to create and support life.

Classes!

This year, because of COVID-19, instead of spending two weeks living on the Stanford campus, classes were hosted on Zoom. While classes on campus would have been absolutely amazing, there were some benefits to learning remotely—number one, class times. Classes started every weekday morning at 8 a.m. PT, which translated to 10 a.m. in my time zone, which was lovely.

My instructor, Kalée Tock, was fantastic at providing us with instruction and any necessary support. She teaches for Stanford Online High School, which means she has experience teaching remotely, which was no small blessing. My classmates and I were able to perform experiments and reduce data with (relative) ease, even at home. Kalée also scheduled some time outside of class for us to meet in small groups of 2-3, to get to know each other “one-on-one,” which was really nice.

Classes ran from 10 a.m. to 12 p.m. CT, and in those two hours we learned about a wealth of subjects. Every day we would start by presenting our “Images of the Day.” The day before we were given prompts like, “Please find an image that is relevant to atoms and molecules in the Earth's atmosphere.” The next day we would share our screens in Zoom and give brief explanations of our images. For whatever reason, I was always in the uppermost left corner of our instructor’s Zoom screen and I always got to go first—meaning I never had to worry about picking the same picture as another student. “Image of the Day” was arguably one of my favorite parts of class. Everyone picked the most fascinating images and learning about each one was wonderful.

In class, we spent a lot of time discussing and learning about exoplanets. Exoplanets are planets found outside our solar system. Because of their distance from Earth (the nearest Proxima Centauri B is several light years away), it is difficult for scientists to confirm their existence. However, they are the best candidates for finding extraterrestrial life. Exoplanets are detected primarily by studying transits, which occur when an exoplanet passes in front of its central star.

The transit causes a (tiny) dip in light and astronomers grab onto that tiny change in intensity with all their might. They photograph it... they watch it through telescopes... the whole nine yards.

We spent a lot of time in class reducing transit data—essentially changing the images into usable data. That process certainly showed me the less exciting parts of the discipline. My teacher gave us very clear-cut instructions of what to do, but the littlest mistakes can completely ruin the entire code. I had no issues with the reducing code, called EXOTIC, but some of my classmates found it *stressful*.

I really enjoyed my course. I thought it was engaging and fun, and the workload was both challenging and manageable—a perfect combo.

Interpersonal Relations

I won't lie. It was difficult making a lot of friends during the program. In residential programs, it's easy to build a network of peers simply because you're with each other all the time. With an online course, you don't really see each other outside of class, and it's not like you can have a nice "get to know you" conversation over Zoom.

I made two friends over the course of SPCS, both of whom are really nice. I do communicate with most of my other classmates, though. At the end of our last session, we all regurgitated our Snapchat usernames into the Zoom chat and created a group chat.

Outside of Class (:

Despite being a remote learning experience, SPCS hosted a lot of "out-of-class" activities.

We attended workshops twice a week. My workshop was called Global Competencies and over the course of four "sessions" (I use quotation marks because two were pre-recorded), we examined topics like cultural sensitivity and the dangers of single stories and stereotyping as well as types of activism.

I personally resonated with the lesson on single stories. A single story is created when someone outside a culture or group of people defines the identity of that culture or group. The lack of full understanding creates a single story or stereotype. I really hope to use what I learned in those workshops to become a better citizen of the world.

The SPCS staff also held optional activities, which I adored. We had a grueling night of trivia (did you know that Wizards of Waverly Place was the Disney show with the most episodes ever? I totally thought it was Hannah Montana), and a super awesome talent show. I actually thought the online talent show was pretty nice. Most people showed pre-recorded videos of themselves performing, and while it was kind of "draggy," people were able to showcase their less performance-based talents (like drawing and cake decorating). "Movie Morning" was also pretty

fun. They showed *Spiderman: Into the Spideverse* in the morning before class (to be friendly to international students), and I have always enjoyed that movie.

Final Thoughts

I really loved my SPCS class, and I think I took a lot away from the course. Astrochemistry and astronomy were fascinating but little known subjects to me, and now I feel like I have a base of knowledge to build on as I grow. I also think that my social skills have improved, though it may sound far-fetched. I didn't really talk to many people "face-to-face/one-on-one," but I think if I can make friends with people through homework-related emails, something positive has happened in that arena.

I want to thank the Garwin Family Foundation for giving me the opportunity to attend SPCS. The quarantine situation is nowhere near ideal and residential programs are admittedly more enriching. But, I still thoroughly enjoyed myself during the two weeks I attended class. I made friends, learned about an incredibly intriguing (and underrated, in my opinion) field of study.

I also want to thank the GFF for indirectly making sure I wasn't a complete couch potato this summer. :)