Charlie Nitschelm

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To the Starship team,

I watched the second star hopper test live with my rocket team and it was simply extraordinary. Water towers can fly. Congratulations so far on your progress with the project! The world is following along.

During the winter break of my freshman year, I witnessed SpaceX land a Falcon 9 on ‘Of Course I Still Love You.’ All my worries and problems disappeared for that moment, stunned with the significance of what I just saw. To this day, it is the moment in my life that showed me what I was passionate about: space exploration. From that revelation, I immediately started a rocket organization under SEDS, which is the world’s largest student-run space organization. Since its founding in 2017, I have grown it to the largest, most interdisciplinary engineering organization on campus with the implementation of transparency and clear short and long-term goals.

First, we worked with off-the-shelf engines with in-depth MATLAB simulations for trajectory and dimension optimization. I struggled during the first year of managing as I assumed that everyone is like me, but I soon realized that everyone has different objectives in life, and that there is nothing wrong with that! Then we moved quickly into the development of Runaway, our hybrid rocket engine. We are currently working towards qualifying the engine to integrate it with a rocket for the Spaceport America Cup in June 2020. Although there is significant engineering work left to do to achieve this goal, my leading abilities have grown the team closer and are no longer afraid to admit when they need help. That change in culture has been the biggest impactor to our technical progress. In the May of 2019, I ran and accepted the Member at Large position for SEDS USA, the presiding nationwide organization for all the SEDS chapters nationwide. I have taken on the development of a SEDS Wiki allowing the transfer of knowledge not just between one college organization, but chapter to chapter across the country. All of us have knowledge that is a commodity to others and sharing allows the entire SEDS community, present and future, to grow our base knowledge further and further. Once released, it will have a significant impact on the growth of our younger chapters.

For the summer of 2019, I was rewarded with the Matthew Isakowitz Fellowship, a program started in honor of Matthew Isakowitz (1987-2017) - an engineer, entrepreneur, and an extraordinary individual whose passion for aerospace inspired all who knew him. Learning about his life and the purpose of the program showed me the big picture of why commercial space is and should be important to everyone. The program paired me with Rocket Lab in California as a propulsion manufacturing engineer. Being the only engineering intern during the summer, I gained experience throughout the entire production process of the Rutherford engine for the Electron. I primarily focused on creating tooling to improve the quality and runtime of the engine’s thrust chamber. This position taught me the importance of pushing forward as a team, doing everything possible to progress together. We were also invited to a fellowship summit in LA to meet the fellows, tour various commercial space companies (including SpaceX), and meet notable leaders in each of the companies. I was fortunate enough to connect with Elon during my visit and talk with him about the future of commercial space and the challenges he sees in manufacturing in the coming years. Elon and his mission with SpaceX are the reason why I found my passion in commercial space, so it was wonderful to meet him face-to-face. This last summer was my first exposure to working in commercial space, and it has only solidified my plans for my future career goals.

Humans need to become multi-planetary, and Starship is the most exciting and impactful project going on right now. I believe I can help the Starship team achieve its goal on building the first vehicle to land humans on Mars. Thank you for considering me for the Propulsion Components Manufacturing Engineer position and I look forward to hearing from you all.

Ad astra,  
  
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