1. In **350 words or less**, please describe the type of company and internship work assignment you would prefer and why?

The host companies are as interdisciplinary as the commercial space industry itself, from additive manufacturing in a microgravity environment to satellite imagery with a 3-5 meter per pixel resolution. I see my experience and passion oriented most with those in rocket propulsion, vehicle integration, and spacecraft design. Each host company serves a purpose of progressing human development in space, but host companies such as Virgin Orbit, Rocket Lab, and The Spaceship Company will always climb to the top of my list. As an intern, my focus would be to learn and assist those around me, to be there and acquire hands on experience with engineers and technicians alike. Opening space is not a one-man venture, the whole is greater than the sum of its parts, and I want to be there for the team.

Over the summer of 2019, I had the opportunity to visit Charlie Nitschelm during his internship at Rocket Lab USA. He initially told me it was going to be a relaxing weekend in California, it turned out to be a whirlwind trip visiting and touring different host companies. We visited The Spaceship Company in Mojave and Virgin Orbit, Spin launch, and Rocket Lab in Los Angeles, it was without a doubt the most inspiring day. Since then it has been my ambition to return to those facilities, walk through Virgin Orbit and Rocket Lab again to see Launcher Ones and Electrons on the floor. In what other profession can your office be next to a rocket? None, and that's why there’s nothing more fascinating than these companies.

In conclusion, commercial spaceflight is my vocation, and whether it takes me 6 months, or 10 years, I will always pursue a career within this industry. If I am granted a spot in the Matthew Isakowitz Fellowship Program, I will bring the love for space I have carried and will carry for the rest of my life. NASA and the Space Race encouraged me to take my first steps, I want to be a part of the team that encourages others to take theirs.

1. Please answer **ONE** of the following essay questions in **350 words or less**:
   * What will be the next giant leap in space technology from the private sector and why?
   * You are testifying before Congress for a hearing focused on the biggest barriers for the commercial space industry. What would be your opening remarks?
   * Elon Musk, in a discussion with our 2019 Fellows, stated that starting a company is like “eating glass and staring into the abyss.” Thankfully, you have the stomach for this kind of business. What start-up idea would drive you into starting a business and why?

Thank you chairwomen Kendra Horn and ranking member Brian Babin, thank you for the opportunity to testify today. As we sit here today, there are more than 21,000 objects larger than 10 cm orbiting the Earth, not to mention the 500,000 bits of space debris that fall between 1 and 10 cm. On the bright side, small debris burns up once it re-enters through the atmosphere, and larger objects can be tracked, simulated and ground impacts predicted. The key term was predicted, we cannot control or modify impacts, simply predict them. As you can see, space debris poses a threat for the space industry on both fronts, in the sky and on land. Competitive entrepreneurship within the commercial space industry has dramatically lowered launching costs, from $54,500 per kilo on the Space Shuttle to $2,720 on the Falcon 9. With this decrease in price, we will see an increase in the number of items launched into orbit. Thus, it is crucial that we recognize commercial space’s responsibility for these items.

In a recent industry study, I asked 15 commercial space professionals what the biggest barriers in the industry were currently, and in the foreseeable future. Of the responses, 8 mentioned space debris and orbital debris disposal as one of their top issues. These professionals are ingrained in our industry, from a Manager of Business Development at one of the largest defense contractors, to a CEO & System Engineer at a Korean based small orbital launch company. Their input is invaluable and as one professional commented on space debris, “It’s like driving across a vast desert with your eyes closed, maximum car speed, with a lot of other cars driving there too… only seeing a very small fraction of things you can run into.” These dangers exist in every facet of space, from life support systems on the ISS, to precision equipment on space satellites. Space debris poses as one of the most formidable dangers for future space missions and will be a significant barrier for the future commercial space industry. Thank you, and I look forward to answering your questions.

1. In **800 words or less,** please answer the following: Why are you excited and passionate about commercial space and your current or future role in it, and why are you a strong candidate for this Fellowship?