Tell us about your experiences as a New American. Whether as an immigrant yourself, or as a child of immigrants, how have your experiences as a New American informed and shaped who you are and your accomplishments? Feel free to discuss how individual people (such as family or teachers), institutions, aspects of law, culture, society, or American governance made an impact on your life as an immigrant or child of immigrants. The program is interested in understanding the context of your personal, professional, and academic accomplishments.

As teenage me clambered with my family through the forest in Sequoia National Park, we met a park ranger who told us that a bark beetle infestation was decimating the trees around us. He explained that drought was weakening the trees’ resistance to the plague and warmer winters were prolonging the bark beetle season. I was not cognizant of this at the time, but these problems are all clearly due to climate change. My mother planned many camping trips like this. She grew up in an oppressive communist regime in Poland and, as a high schooler, found an outlet in nature. Whenever she got a chance, she would hike alone or with friends from hostel to hostel in the Carpathian Mountains. Some of my best memories are from family camping trips to Sequoia, Kings Canyon, Yosemite, Grand Teton, Yellowstone, Zion, Bryce Canyon, and the Grand Canyon National Parks. However, these natural wonders are in danger of being destroyed by anthropogenic pollution and climate change.

My dad’s childhood is tied to Silesia, a Polish region known for its coal mining. My grandfather, who was a mining engineer there, was sent by a Polish firm to oversee the building of coal mines in underdeveloped countries, as commissioned by local industrialists. As a byproduct, my dad grew up in India, Pakistan, and Nigeria. Mining coal is dangerous work; days are spent in cramped tunnels where a triggered leak of methane can cause an explosion, igniting the walls of the underground mine. My identity is tied to an industry that extracts natural resources for the aim of profit while putting the safety of workers at risk. This family history sparked a desire to be part of the green energy transition that moves away from fossil fuels. The education I have received enables me to do so.

As a second-generation immigrant, I followed the well-beaten path of pursuing engineering at the STEM powerhouse of Caltech. However, the freshman general chemistry class changed my mind. Learning about how the geometry of electronic orbits affects global chemical properties was fascinating. This prompted me to do a series of summer internships in quantum chemistry, a field that develops computational techniques that apply underlying quantum physics to the “stereotypical” chemistry of scientists wearing white coats managing bubbling solutions in beakers. The research I did was to improve catalysis, which is when a substance speeds up a chemical reaction without being used up itself. The production of necessary chemicals, like artificial fertilizers, must be made more efficient through catalysis, as the chemical industry contributes a staggering 6% to global emissions. These experiences provided clarity in the research direction I wanted to pursue; To make a difference in sustainability with the intellectual stimulus of quantum chemistry.

Then, in the middle of my junior year, I was dealt some cards that threatened to end my academic aspirations. I was diagnosed with leukemia and suffered a stroke, which impaired my motor skills. The presentation of the stroke is such that I use an assistive device to walk; my ability to handwrite or type is slow; and the rate, intonation, and intelligibility of my speech are affected. I had developed a passion for quantum chemistry, but I needed to figure out how to do it.

Success in the field is dependent on the ability to program effectively. My typing speed is around 15 wpm with poor control of a computer mouse. Therefore, I have benefited immensely from the AI boom. I use GitHub Copilot, which is a black box tool powered by AI to give suggestions as you code. It can be thought of as Microsoft Word’s autocomplete on steroids. I took the initiative to learn dictation to code by voice. The computer doesn’t register everything perfectly due to my speech impairment, but all of the commands are customizable, so I am able to choose ones that work for me. For example, I might just say “super” in order to write “supercalifragilisticexpialidocious.” I also use ChatGPT to fix typos in my dictation, that the speech engine recognizes incorrectly. For example, the computer might register my speech as “The quick front dogs jumps over the late dog,” whereas ChatGPT might change it to what it thinks I had meant to say: “The quick brown fox jumps over the lazy dog.” Even for longer pieces of text, ChatGPT spits out a response in seconds for a fraction of a penny. The fact that this cutting-edge technology, which I rely on to make an impact on sustainability, originates from Silicon Valley makes me proud to be an American. Illustrative examples of my use of these AI tools is provided by short clips in the optional exhibit.

The physical disability is not a worry because of the Americans with Disabilities Act. You do not think about these things when you do not need them, but I have found that most doors that I must pass are accessible through an electric press, and I have a pass for priority parking near my destination. This is especially clear on college campuses, where things are ADA-friendly because older faculty members with disabilities rely on this. I really wanted to do my first flight since the stroke for a visit to UC Berkeley independently. However, I was cautious about this because airports are a place of constant bustle, at which my slower walking speed would not fly (no pun intended). But after this experience, I realized that I have no reason to be concerned. I went to the check-in desk at the airport, told the person that I needed wheelchair assistance, and then was wheeled into my seat on the airplane. I joke to my friends that I get through the TSA faster than anybody in this way because I am allowed to skip the line in my wheelchair.

Because of my identity as a New American, with access to American disability resources enabling me to do scientific research, I am inspired to pursue a career in sustainability to pay forward improving life quality for others.