

Personal Statement-Vivian Rost Nasshan

Energy is integral to our society and the need for energy is universal. Energy systems, however, are not universal and are intertwined with social, political, and economic systems that support the need for energy. The placement of these systems; power plants, wood pellet burning facilities, hydro dams, etc, are also not universal and are likely to be placed in areas consisting of groups that do not benefit from this infrastructure.

This disparity is extremely unfair, but not solely an energy issue, it stems from the Anthropocene, an issue I studied heavily in my Sustainability Debates class, where we reviewed Feral Atlas and many other media forms covering sustainability issues. In the class, we were tasked to experience various media such as audio of indigenous communities songs and reviews of the racial justice in sustainability written by Dr. Robert Bullard. In class we would debate the introspective questions written regarding sustainability in the article and relating to other media previously read. The waste energy conversion creates and the disparity of its effects on minority communities was discussed, but exploring the benefits of hot water buffer tanks in environmental justice communities and the equity of power outages would extremely interest me and would build on the foundation I gained from my class.

Additionally, the cohesion of systems is of great interest to me and in my opinion, a fairly overlooked aspect of sustainability. Infrastructure can be built, developed, and installed into our daily lives without intense thought of how it interacts with the current system. This is something, as an industrial engineer, I wish to review and help fix. For example, when adjusting goals and plans for carbon emissions, analyzing the patterns of current carbon emissions can help make carbon sequestration more efficient. Human civilization is not a consistent system and adapting carbon mitigation systems to the intermittency of human life can validate systems and limit wasteful energy usage and is sustainable within itself.

Since I was 12, I have worked with a nonprofit CISV discussing its four main themes: sustainability (in regard to the UN Sustainability goals), human rights, diversity, and conflict resolution skills. The discussion of the overlap and interdependency of the themes is integral to society's success. In my role as President, I was tasked to curate creative activities that exemplified each of the themes in an interactive manner to participants ages 11-17.

Currently, I am learning data analysis in R using excel files and other .CSVs and reading, interpreting, and explaining data trends. Additionally, I have used MATLAB to track electrical signals across circuits and systems to demonstrate the energy usage of specific components. I have also used Python to model the interactions between

Personal Statement- Stan Laguerre

Throughout my time at college, my courses have helped me develop the necessary skills to enter the workforce as a successful programmer and a valuable employee. In addition, being fortunate enough to gain a liberal arts education, I've expanded my knowledge in my primary interests of computer science and mathematics and the humanities, allowing me to become a more well-rounded individual.

As my abilities have expanded through the first few years of my college career, I've been particularly interested in software development, artificial intelligence, computer graphics, and cybersecurity. Letting my creativity show through my work has always been important to me, and working as a developer for a software project would allow me to do just that. Moreover, on account of my artistic background, the appeal of computer graphics was something that I had realized early in my programming journey. As a child, seeing the accuracy and attention to detail in the artwork my dad sold in Haiti to make a living and begging him to teach me everything he knew stuck with me over the years. I now wouldn't hesitate to take an opportunity to display those same skills in a computer science context. Additionally, with my second concentration being math, the proficiency with computation and the capabilities mentioned above that cybersecurity and A.I. require would also align with what I want to do and allow me to work with my strengths.

As I look forward to my life and career after college, I want to enter the broad field of computer science, working in one of these disciplines to start my career and then eventually go back to school to get a postgraduate degree. But, most importantly, regardless of what I'm doing, I desire to work in something that I know can positively impact others, and knowing that I'm a part of something that can allow me to do that would motivate me most. Growing up, watching my parents struggle to adapt to life after moving from Haiti to the U.S. with essentially nothing gave me a perspective that I know countless others share. Being fortunate enough to have people along the way to help my family make it through rough times and having the awareness to understand my privileged position now, I never take it for granted. And I know that I must also, in some way, help those in need with the skills that I have and will acquire.

As a first-year student amidst the pandemic, I began to learn the basics of programming and familiarize myself with it. The following year, I progressed considerably in my abilities, learning invaluable skills from my discrete mathematics course on thinking outside the box and at a higher level to better my problem-solving. With that knowledge, I was able to be successful in my software development course, working well as a team with three other students to program our software project from scratch. Now as a junior, I'm eager to use my experiences to branch out into the specific fields of programming that interest me and build upon what I have learned.

With the goals that I have set for myself, the impact that an NSF opportunity can have on my plans for the future would directly put me on my way to completing them. Being involved in a research program surrounded by other undergraduates that share a similar passion and interest as I do, under the guidance of top scientists, engineers, and educators, is an invaluable

Vivian Rost-Nasshan

email@gmail.com | Silver Spring, MD

Freshman majoring in Industrial and Management Engineering looking for a Summer 2023 internship to explore career opportunities and continue hands-on engineering experiences in the US or abroad.

Education

Rensselaer Polytechnic Institute (RPI) | Troy, NY *Expected May 2026*

Bachelor of Science in Industrial and Management Engineering

- Course work: Python, Circuits, Statics, Statistics, CAD and Communications, Sustainability Debates

Wheaton High School | Silver Spring, Maryland *May 2022*

Engineering Magnet High School Completion

- AP Scholar with Honor and Distinction twice
- Project Lead the Way Engineering program completer
- Senior award for outstanding efforts toward community building and volunteerism

Professional Experience

Estudos, Projectos e Consultoria Ambiental (EPCA) | Lisbon, Portugal *July 2022*

Intern

- Designing landscaping plans for gardens
- Communicating landscaping plans through Photoshop and Autodesk CAD, including 3D models
- Organizing portfolios and catalogues of plant species

Pave the Way Foundation | New York City, NY *May 2021-December 2021*

Intern

- Organizing donor information to further retain interest and optimize communications
- Specialization in Blackbaud programs

CISV | Washington, DC *August 2014-Present*

Current Member, Local Junior Representative and Liaison to Board (2019-2022)

- Exploring cultural differences in sustainable development, human rights, diversity, and conflict resolution
- Founding an international virtual book club including CISV Canada, US, and Brazil with 30+ members
- Organize mini-camps and team activities to retain interest and recruit new members

Community Activities and Leadership

Member, Rensselaer Motorsport Formula SAE Team *August 2022 - Present*

- Researching and comparing various high voltage parts including Accumulator Isolation Relays
- Modeling and testing composite materials for an electric vehicle

Co-President, Wheaton High School Society of Women Engineers *October 2018-May 2022*

- Leading team in developing and racing three electric vehicles in DC Electric Vehicle Grand Prix Race
- Encouraging female exploration in the STEM field including speakers, field trips, and hands-on learning
- Recognized by Maryland State Government for excellence in engineering

Participant, Professional Leadership Program *August 2022 - December 2022*

- Completing workshops led by IBM, Momentive, Boeing, GE in improving leadership and teamwork skills

Researching Business Case Competition, The Boeing Company *September 2019-May 2022*

- Researching and advocating for Boeing's next sustainable business endeavors
- Final paper and presentation to Boeing leadership, winning first place two years in a row, mentoring a third

Member, RPI Society of Women Engineers *August 2022 - Present*

Member, Women's Mentoring Program *August 2022 - Present*

Member, RPI Student Government Senate *August 2022-Present*

Consortium Representative, Montgomery County Public Schools Student Advisory Council *August 2021-May 2022*

- Advocating student views on policy reform

Skills

- Proficient in Microsoft and Google products
- Experience in Autodesk AutoCAD and Inventor, NX Siemens
- Sufficient in Python, R, MATLAB, and Simulink
- Blackbaud Certification in Raiser's Edge
- Languages:
 - German; novice speaking, writing, and intermediate understanding
 - Spanish; basic conversation, writing, and understanding