

Permanent Address
4811 Bennington Pl E
Jefferson, MD 21755

Rachel Lauren Beall
301-401-6024 | rlbeall@ncsu.edu
[linkedin.com/in/rachel-beall/](https://www.linkedin.com/in/rachel-beall/)

School Address
2530 Sullivan Dr
Lee Residence Hall
Raleigh, NC 27607

EDUCATION

North Carolina State University, Raleigh, NC

- B.S. Computer Science May 2023
- B.S. Materials Science and Engineering May 2023
- GPA - 4.0

Brunswick High School, Brunswick, MD

- Graduated May 2019
- Unweighted GPA - 4.0; Weighted GPA - 4.7353

TECHNICAL EXPERIENCE

Undergraduate Research Assistant, NC State University, Jones Group March 2020 - present

- Working in an x-ray diffraction (XRD) lab to characterize materials
- Determining the impacts of fixed versus varied instrument parameters while fitting XRD patterns
- Analyzing XRD patterns using Rietveld refinements on GSAS-II and Bayesian refinements on QUAD

Fabric Bucket - First Year Engineering Design Challenge Sept 2019 - Nov 2019

- Designed waterproofed materials through lamination and coating techniques
- Prototypes a portable and compressible bucket composed primarily of fibrous materials
- Presented project at First Year Engineering Design Day with three group members

National Cancer Institute Research Intern, Cell Developmental Biology Laboratory Jun 2018 - Aug 2019

- Worked in a wet lab performing cellular fractionation to determine new cancer therapy techniques.
- Maintained the purchasing log and kept a running inventory of lab materials.
- Presented project at Spring Research Festival to experts in their field.

FIRST Tech Challenge Aug 2016 - May 2019

- Founded then led team of 15 students to World Championship in Detroit, Michigan 2019.
- Modeled linear actuator using VectorWorks.
- Designed and implemented latching and ball collection electromechanical mechanisms.
- Programmed drive controls with Blockly and gyroscope in Javascript.
- Performed statistical analysis of competing teams to determine optimal partners.

Small Scale Roadside Wind Turbine Aug 2016 - May 2017

- Prototyped vertical axis and oscillating wind turbines.
- Tested 17 different blade types for oscillating wind turbine.
- Created a business model for the prototype.
- Presented project at the County Fair and StartUp Frederick.

Hydroelectric Residential Stormwater Device Aug 2015 - May 2016

- Designed a hydroelectric device that utilizing the energy of falling water in a residential gutter system.
- Calculated the amount of energy the device would produce on average per year in Maryland.

LEADERSHIP & ACTIVITIES

Society of Women Engineers Sept 2019 - present

- Fundraising and Outreach Committee

Krispy Kreme Challenge Sept 2019 - present

- Executive Assistant Apr 2020 - present
- Fundraising Committee Sept 2019 - Apr 2020

Quad Area Council Sept 2019 - Apr 2020

- Sustainability Committee

SciBridge Jan 2020 - present

- Potentiostat Technical Team

SKILLS

Java, JavaScript, Blockly, VectorWorks, GSAS-II, QUAD, Statistical Analysis, Cell Fractionation, Western Blotting, Microinjection

RELEVANT COURSEWORK

- Structure and Properties of Engineering Materials
- Experimental Methods of Structural Analysis of Materials
- Structure of Materials at the Nanoscale
- Introduction to Thermodynamics of Materials
- Intro to Computing - Java
- Software Development Fundamentals - Java
- Discrete Mathematics for Computer Scientists
- Differential Equations
- Elementary Linear Algebra
- Probability and Statistics for Engineers

HONORS & AWARDS

Park Scholarship recipient, North Carolina State University, 2019

Dean's List: Fall 2019, Spring 2020

StartUp Frederick Country Winner, 2017

County Science and Engineering Fair, 2016, 2017

- Intel International Science and Engineering Fair Student Observer, 2016, 2017
- 1st place in category, 2017
- 3rd place in category, 2016