

Isabella (Izzy) Cowan

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EDUCATION

Cornell University, College of Engineering, Ithaca, NY
Bachelor of Science, Mechanical Engineering, Minor in Aerospace Engineering
GPA: 3.4

December 2025

Relevant Courses:

Dynamics of Flight Vehicles, Mechanical Synthesis, Fluid Dynamics, Thermodynamics, Statics, Dynamics, Discrete Mathematics, System Dynamics, Mechanics of Materials, Automotive Engineering, Heat Transfer, Python, Java, Autonomous Mobile Robotics, Mechatronics

RESEARCH EXPERIENCE

- Sustainable Manufacturing of Aircraft**, NASA Langley Research Center, *Advanced Materials Department Intern* **Aug-Dec 2024**
- performed thermal & mechanical tests such as differential scanning calorimetry, thermogravimetric analysis, & rheological tests to measure properties of natural polymers & fibers under varying conditions
 - drafted comprehensive literature review on enhancement of thermal & mechanical properties of polylactic acid & natural fibers for composites in aerospace applications
 - interpreted scanning electron & optical microscope images to analyze composition & infiltration in natural composites
- Aerodynamic Reconstruction of Mars 2020 Heatshield**, NASA Langley Research Center, *Volunteer Researcher* **Oct-Dec 2024**
- used CAHVOR camera model & MATLAB data processing to remove distortion from video of heat shield falling to Mars with the goal of determining aerodynamic coefficients of martian environment from undistorted footage
- Analysis of Hydrogels to Mimic Brain Matter**, Cornell Organic Robotics Lab, *Undergraduate Volunteer Researcher* **Jun-Aug 2023**
- designed hydrogel molds & fabricated using precision Carbon 3D printers
 - fabricated hydrogel variants in the wet lab
 - performed compression testing on hydrogel samples & analyzed stress-strain curves to compare to brain matter

OTHER WORK EXPERIENCE

- NASA Johnson Spaceflight Center**, Houston, TX, *Rapid Prototyping Lab Intern* **Jun -Aug 2025**
- programmed Kalman filter & installed new electronic system to minimize noise experienced by flight simulator hardware
 - assisted with user guide creation for Orion flight display unit system
- Ash Grove Cement Company**, Sumterville, FL, *Engineering Intern* **May -Aug 2024**
- created drawings, bill of materials, & construction plan for, as well as managed in-house fabrication of concrete sign
 - compiled capital expenditure report for major plant repairs
- Emerson Manufacturing Lab**, Ithaca, NY, *Machine Shop Staff* **Jan -May 2024**
- assisted with training students on machines such as mill and lathe
- Cornell University College of Engineering**, Ithaca, NY, *Thermodynamics Teaching Assistant* **Aug -Dec 2023**
- Cornell University College of Computer Science**, Ithaca, NY, *Python Programming Consultant* **Aug 2022-May 2023**
- Cornell Engineering Learning Initiatives**, Ithaca, NY, *Academic Workshop Facilitator* **Jan-May 2022**
- worked with co-facilitator to prep worksheets, PowerPoints, & group activities using active learning techniques

LEADERSHIP EXPERIENCE

- NASA PAXC (Promoting Agency Cross-Center Connections)**, *Langley Research Center Co-Chair* **Sep-Dec 2024**
- planned center-wide events at NASA LaRC such as informative talks, facility tours, egg drop competition, & artistic events
- Women of Aeronautics & Astronautics**, Cornell University, *Social Relations Chair* **May 2024-May 2025**
- created graphics for events promoting women's involvement in aerospace at Cornell, managed WOAA Instagram account
- Cornell Marching Band**, *Flute Co-Section Leader* **Jan-Dec 2023**
- organized section-wide and full band events, held lessons to teach flute to new members, managed marching ranks, attended administrative meeting, ran flute Instagram account
 - rehearsed, organized, & arranged music for annual charity concert
 - resolved conflicts between members
- Cornell Marching Band**, *Treasurer* **Jan-Dec 2022**
- prepared yearly budget spreadsheet, ordered equipment for band, managed monthly actuals

AWARDS

NASA OSTEM Shining Star Intern Award, *NASA Langley Research Center*

Dec 2024

CAMPUS INVOLVEMENT

Cornell Amit Bhatia Libe Cafe, Cornell University, *Barista*

Jan 2024-May 2024

SPECIALIZED SKILLS

Programs: Fusion 360, Prusaslicer, KiCAD, NanoCAD 5, Python, MATLAB, Java, C++, Excel, PowerPoint, Arduino

Engineering Skills: Operation of Mill & Lathe, Soldering, 3D Printing, Mechanical Design, Wet Lab Skills, Construction Planning, Project Management, PCB Design, Circuits & Breadboards, Maintenance Engineering, Teaching, Communication, Public Speaking, Teamwork, Customer Service, Leadership, Conflict Resolution

Lab Equipment: Rheometer, Tensile Tester, Differential Scanning Calorimeter, Thermogravimetric Analyzer, Scanning Electron Microscope, Optical Microscope, Fourier-Transform Infrared Spectroscopy, Raman Spectroscopy, LN2

Other Skills: Working with Children, Events-Planning, Sewing, Flute, Musical Arrangement, Conducting