

# 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

<b>Sustainable Manufacturing of Aircraft</b> , NASA Langley Research Center, <i>Advanced Materials Department Intern</i>	<b>Aug-Dec 2024</b>
• 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	
<b>Aerodynamic Reconstruction of Mars 2020 Heatshield</b> , NASA Langley Research Center, <i>Volunteer Researcher</i>	<b>Oct-Dec 2024</b>
• 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	
<b>Analysis of Hydrogels to Mimic Brain Matter</b> , Cornell Organic Robotics Lab, <i>Undergraduate Volunteer Researcher</i>	<b>Jun-Aug 2023</b>
• 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

<b>NASA Johnson Spaceflight Center</b> , Houston, TX, <i>Rapid Prototyping Lab Intern</i>	<b>Jun -Aug 2025</b>
• 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	
<b>Ash Grove Cement Company</b> , Sumterville, FL, <i>Engineering Intern</i>	<b>May -Aug 2024</b>
• 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	
<b>Emerson Manufacturing Lab</b> , Ithaca, NY, <i>Machine Shop Staff</i>	<b>Jan -May 2024</b>
• assisted with training students on machines such as mill and lathe	
<b>Cornell University College of Engineering</b> , Ithaca, NY, <i>Thermodynamics Teaching Assistant</i>	<b>Aug -Dec 2023</b>
<b>Cornell University College of Computer Science</b> , Ithaca, NY, <i>Python Programming Consultant</i>	<b>Aug 2022-May 2023</b>
<b>Cornell Engineering Learning Initiatives</b> , Ithaca, NY, <i>Academic Workshop Facilitator</i>	<b>Jan-May 2022</b>
• worked with co-facilitator to prep worksheets, PowerPoints, & group activities using active learning techniques	

## LEADERSHIP EXPERIENCE

<b>NASA PAXC (Promoting Agency Cross-Center Connections)</b> , Langley Research Center <i>Co-Chair</i>	<b>Sep-Dec 2024</b>
• planned center-wide events at NASA LaRC such as informative talks, facility tours, egg drop competition, & artistic events	
<b>Women of Aeronautics &amp; Astronautics</b> , Cornell University, <i>Social Relations Chair</i>	<b>May 2024-May 2025</b>
• created graphics for events promoting women's involvement in aerospace at Cornell, managed WOAA Instagram account	
<b>Cornell Marching Band</b> , Flute Co-Section Leader	<b>Jan-Dec 2023</b>
• 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	
<b>Cornell Marching Band</b> , Treasurer	<b>Jan-Dec 2022</b>
• prepared yearly budget spreadsheet, ordered equipment for band, managed monthly actuals	

## AWARDS

<b>NASA OSTEM Shining Star Intern Award</b> , NASA Langley Research Center	<b>Dec 2024</b>
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## CAMPUS INVOLVEMENT

<b>Cornell Amit Bhatia Libe Cafe</b> , Cornell University, <i>Barista</i>	<b>Jan 2024-May 2024</b>
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## 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