

# Felicity Daniels

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## EXPERIENCE

### Research Fellow and Sub-Team Lead, [Wisconsin Space Grant Consortium](#)

Modal Propellant Gauging - Propellant Refueling and on Orbit Transfer Operations

June. 2019 – Current

- Designed and constructed propellant management devices for liquid control in microgravity environments
- Validated Designs through testing and modeling
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### Research Project Manager and Team Lead, [Colorado Space Grant Consortium's Rocksats-C Program](#)

Computational Fluid Dynamics Software Validation

June. 2019 – Current

- Designed and constructed both capillary flow devices and data acquisition devices for measurement of fluid behaviors in microgravity environments
- Conducted and coordinated experimental investigations into the validity of computational fluid dynamics software applicable to aerospace systems and vehicles
- Oversaw mission simulation and full-integration testing to ensure project success.
- Managed budget, logistics, and meetings
- mentored students to become Project manager and Team Lead
- 3D printed parts and stress tested to failure

### Research Assistant, [Carthage College SURE Program](#)

Development of Multidirectional Selective Plane Laser Imaging Microscopy

June. 2019 – August. 2020

- Participated in the development of requirements for design criteria, cost estimates, schedules, and feasibility of multidirectional selective plane imaging technology.
- designed a multidirectional selective plane imaging microscope for fluorescence microscopy
- Presented Research at the Celebration of Scholars.

### Mechanical Engineer, [Wisconsin Space Grant Consortium](#)

Collegiate High-powered Rocket Launch Competition

Sept. 2018 – May. 2019

- Constructed, designed, and flew a high-power, single-stage rocket that landed safely and deployed a Ground Excursion Module that moved under its own power and without external control after the rocket landed. Focused on the system design and performance.

### Mathematics and Physics Tutor, [Carthage College Tutoring Department](#)

Teaching and Communication

Sept. 2018 – Sept. 2020

- Taught students mathematics including but not limited to Algebra, Trigonometry, Analysis, Statistics, Calculus I, Calculus II, Multivariable Calculus, Linear Algebra, and Differential Equations.
- Explained Introductory physics to students

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## EDUCATION

### Carthage College, Kenosha, WI

B.A. Physics, Mathematics Minor

Sept. 2017 – Anticipated Graduation: May. 2021

Cumulative GPA: 3.6

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## Presentations and Publications

- Poster presentation for development multiplanar selective plane imaging microscopy at the [Carthage College Celebration of scholars 2019](#).
  - Poster Presentation for Modal Propellant Gauging - Propellant Refueling and on Orbit Transfer Operations at the [Carthage College Celebration of scholars 2020](#).
  - Poster Presentation for Capillary Flow Experiment: Validating CFD-Predicted Liquid configuration at the [Carthage College Celebration of scholars 2020](#).
  - I have authored and co-authored a few papers. I will mention and link them here
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## SKILLS

**Mathematics:** Differential Equations, Optimization, Multivariable Calculus

**Management:** Waterfall Project Management, Agile Project Management, Slack

**Programming Languages:** Python, R, C++, and Mathematica.

**Mechanical:** CAD Modeling in Inventor, computational fluid dynamics in OpenFOAM

**Misc.:** Moderate experience in Excel, Proficient in LaTeX