

# LAUREL BOURG

lbourg3@gatech.edu ◇ www.linkedin.com/in/laurel-bourg

## CORE COMPETENCIES

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Physics, Planetary Science, Astrophysics, Geophysics, Science Comms, Computational Physics, Open-software Development, Data Analysis, Machine Learning, Advocacy for Women in STEM, Outreach

## EDUCATION

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### Georgia Institute of Technology (GT)

*August 2022 — Present*

*Bachelors of Science in Physics, Concentration in Astrophysics*

GPA: 3.86

Minors in Scientific & Engineering Computing and Geophysics

## RESEARCH EXPERIENCE

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### NASA Summer Intern, NASA GSFC

*May 2025 – August 2025*

*Julie Crooke, Natasha Latouf*

Competitively selected science communication internship focused on writing articles and other outreach materials for the Habitable Worlds Observatory website to generate interest and invite collaboration across disciplines. Inaugural class of HWO Internship Program.

### Student Research Assistant, PLANETAS, GT

*Oct 2023 — Present*

*Frances Rivera-Hernández, Karl Lang*

Research focusing on understanding outburst crater breach floods on Mars in Jezero Crater using the software D-Claw to identify areas of high inundation and possible sediment deposition sites.

### Student Research Assistant, Geometry of Materials Lab, GT

*May 2024 — Dec 2024*

*Elisabetta Matsumoto*

Research dedicated to applying statistical techniques over sweeps of yarn parameters such as bending modulus using Python scripts based on numerical interpretation of continuous systems.

### Student Research Assistant, LIGO & GT Collaboration

*Aug 2022 — Mar 2024*

*Laura Cadonati, Meg Millhouse*

Investigation into signal processing using data from LIGO through analytical software based on Bayesian methods.

## HONORS & AWARDS

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### NASA Summer Internship

*Summer 2025*

#### Award Amount: \$8200 stipend

Funded 10 week position working on-site at Goddard Space Flight Center for the Habitable Worlds Observatory

### Student Leadership Grant

*Fall 2024*

#### Award Amount: \$160

Awarded to support travel and hotel costs to present at the American Geophysical Union 2024 Meeting.

### PURA Travel Award

*Fall 2024*

#### Award Amount: \$1,000

Awarded for above.

### Georgia Tech College of Science Dean's Scholarship

*Fall 2022*

#### Award Amount: \$80,000

4 years of funding to reduce tuition for an out-of-state undergraduate student working towards a Bachelors in Science.

## PUBLICATIONS

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Lehnigk, K., **Bourg, L.**, et al., "Outburst flooding as a biosignature dispersal mechanism on Mars", 2025, in prep

## POSTERS & ATTENDANCE

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### Posters

APS Conference for Undergraduate Women in Physics *January 2025*  
Title: Simulating Outburst Floods from East Jezero Crater Using D-Claw

American Geophysical Union 2024 Meeting *December 2024*  
Title: Simulating Outburst Floods from East Jezero Crater Using D-Claw

### Attendance

Towards the Habitable Worlds Observatory, Washington D.C. (July 2025) | APS Conference for Undergraduate Women in Physics, Atlanta, Georgia (January 2024) | APS Conference for Undergraduate Women in Physics, Orlando, Florida (January 2023)

## PROGRAMMING & COMPUTER SKILLS

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**Programming Languages:** Python (Advanced), BASH (Advanced), C++ (Intermediate), Mathematica (Intermediate)

**Software:** QGIS (Advanced), JMARS (Advanced), Jupyter Notebook (Intermediate)

## CAMPUS & COMMUNITY INVOLVEMENT

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**Society of Physics Students** *August 2022 — Present*  
Outreach Committee Chair (4/23 – Present)

- Cultivate interest in physics among children in K-12 through interactive demonstrations and heartfelt passion.
- Develop relationships between Georgia Tech and local schools with an emphasis in underprivileged areas.

**Society of Women in Physics** *August 2022 — Present*  
Vice President (May 2025–Present), President (May 2024–May 2025), Secretary (Aug 2023–May 2024)

- Organize specific plans and delegate roles to accomplish goals that improve the welfare of the physics department student body and promote an environment that welcomes women and gender minorities.
- Lead executive officer meetings and promote constructive conversation.

**Student Emerging Leaders Advisory Board** *June 2024 — May 2025*  
Board of undergraduate students that meets with various GT administration on issues concerning students and their well-being

**Student Assistant for Earth & Atmospheric Sciences Dept.** *May 2024 — May 2025*  
Responsible for maintaining a productive environment in the department by way of delivering correspondence, keeping supplies stocked, and mitigating obstacles faced by faculty day-to-day.

**Great Conversations** *Sept 2024 — Feb 2025*  
Chair of Internal Affairs (Aug 2023 - Feb 2025)  
Organization for facilitating Socratic forums to discuss philosophical ideas in science and psychology.