

# Sylvain Foisy (*he/him*)

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## Education

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**Columbia University / NASA GISS** 2024 – Present

Ph.D., Department of Earth and Environmental Sciences, New York, NY, 10025

Thesis advisor: Dr. Susanne Bauer / co-advisor: Dr. Kostas Tsigaridis

**Williams College** 2020 – 2024

B.A., Department of Geosciences, Williamstown, MA, 01267

Thesis advisor: Prof. Anthony Carrasquillo / co-advisor: Prof. José Constantine

## Research Experience

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**Graduate Researcher** 2024 – Present

Columbia University, Department of Earth & Environmental Sciences

- Conducting research at NASA GISS (Goddard Institute for Space Studies), while completing graduate coursework at Columbia University.
- Advancing the development of NASA's premiere CMIP-class climate model, GISS ModelE3.1, by integrating aerosol retrievals from satellites & ground-based observations.

**Senior Thesis Researcher** 2023 – 2024

Williams College, Department of Geosciences

- Organized and built the college's first ever cloud chamber for studying atmospheric aerosols, as part of Prof. Anthony Carrasquillo's environmental chemistry lab.
- Quantified the effects of hydroxynitrates on liquid–liquid phase separation in atmospheric aerosols, and constructed phase diagrams for complex, multi-component organic aerosol mixtures.

**Research Assistant** Summer 2023

Pennsylvania State University, Department of Chemistry

- Summer Research Experience for Undergraduates (REU) program participant studying with Prof. Miriam Freedman's atmospheric aerosol group.
- Designed and performed laboratory experiments of liquid–liquid phase separation in mixed organic–salt atmospheric aerosol systems, systematically testing ion-specific influences predicted by the Hofmeister series.

**Research Assistant** 2021 – 2023

Williams College, Department of Geosciences

- Undergraduate researcher for Prof. José Constantine's geomorphology lab.
- Quantified sediment yield and water quality variability in a small New England catchment, using membrane filtration, turbidity sensors, nutrient analysis, and other field methods.

## Scholarly Work

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**Foisy, S.**, Bauer, S., Tsigaridis, K., Hasekamp, O., Fu, G. (in prep). *Leveraging co-located PACE SPeXone data and NASA ModelE-MATRIX to determine atmospheric composition.*

**Foisy, S.** (2024). *Liquid-Liquid Phase Separation: Exploring the Effects of Hofmeister Salts and Organonitrates.* B.A. Thesis, Williams College, Department of Geosciences. [Available here.](#)

## Presentations

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**Foisy, S.**, Bauer, S., Tsigaridis, K., Hasekamp, O., Fu, G. (2026). *Leveraging co-located PACE SPeXone data and NASA ModelE-MATRIX to determine atmospheric composition.*

- **Invited Speaker**, NASA Goddard Ocean Ecology Lab Special Seminar, March 2026, Greenbelt, MD.
- American Geophysical Union Fall Meeting (Oral), December 2025, New Orleans, LA. [Abstract.](#)
- AeroCom (Oral), October 2025, Institut Pascal, Université Paris-Saclay, France.

**Foisy, S.**, Pitta, K. R., Freedman, M. A. (2023). *Liquid-Liquid Phase Separation in Aerosols: Exploring Ion Effects.* American Geophysical Union Fall Meeting (Poster), December 2023, San Francisco, CA. [Abstract.](#)

Constantine, J., Lowe, E., **Foisy, S.**, Fields, J., Dethier, D., Racela, J. (2022). *Upland Sediment Yield and the Importance of Suspended Sediment in a New England Watershed.* Geological Society of America Annual Meeting (Poster), October 2022, Denver, CO. [Abstract.](#)

Constantine, J., Huang, A., **Foisy, S.**, Lange, K., Parfait, D. (2021). *Impacts of Salinity Encroachment on Coastal Marshes in Southern Louisiana.* American Geophysical Union Fall Meeting (Poster), December 2021, New Orleans, LA. [Abstract.](#)

Armstrong, M., **Foisy, S.**, Douglas, C., Racela, J., Constantine, J. (2021). *The Integrated Impacts of Land Use and Extreme Hydrological Events on a New England Catchment.* American Geophysical Union Fall Meeting (Poster), December 2021, New Orleans, LA. [Abstract.](#)

## Honors & Awards

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**NASA FINESST Graduate Fellowship** 2025 – Present  
Graduate student research award from NASA's Science Mission Directorate supporting independent, student-led research in Earth science. [Program link.](#)

**Highest Honors for Senior Thesis** 2024  
Williams College, Department of Geosciences.

## Teaching

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**Teaching Assistant, Earth's Climate System (UN2100)** Fall 2025  
Columbia University, New York, NY

- Led laboratory classes exploring fundamental Earth Science research areas, hosted weekly TA sessions, & graded assignments for 40+ students.

**Course Instructor, Summer Science Program**  
Williams College, Williamstown, MA

Summer 2024

- Developed & co-lectured an innovative Williams College environmental science course, integrating video communications into a lab-based class. Work featured in a [talkSTEM publication](#).

**Teaching Assistant, Mastering GIS (ENVI 214)**  
Williams College, Williamstown, MA

2021 – 2024

- Hosted weekly TA sessions, provided in-class assistance, & mentored 20+ students on final projects using GIS software.

## Service & Leadership

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**Organizer & Opening Host, 100-Hour Weather & Climate Livestream** 2025  
Served as opening host for the [Weather & Climate Livestream](#), a continuous global science outreach event that reached 180,000+ live viewers and was featured in *The New York Times*. Created and edited social media reels to expand engagement across platforms.

**Event Host, Claiming Williams** February 2023 & 2024  
Meeting representative & host for the Center for Diversity, Equity, & Inclusion during Claiming Williams, a day dedicated to discussions regarding access to higher education. Hosted teach-ins about affluence and athletics, targeted college recruitment processes, and how community-based efforts can partially remedy unfair admission opportunities.

**Interim Social Media Deputy Director, Climate Cardinals** Summer 2024  
Led content strategy & analysis for an organization dedicated to bridging the language gap in climate change literature. Created content in collaboration with the [U.S. State Department](#).

## Hobbies & Interests

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**Giant Snow Structure Sculpting**  
Spearheaded the construction of a [15-foot snowman](#) in Williamstown, MA, a [24-foot snowman](#) in Potsdam, NY, and most recently Columbia University's [tallest ever snowperson](#).

**Professional Content Creator (@syl\_foisy), TikTok**  
2.0M followers, 2.4B views; ranked #73 globally (of 1B users) for views in November 2022 with 355M monthly views. Creator of paper-folding tutorials and musical quizzes.

**Music Video Creation**  
Experience creating violin music videos, including ones that highlight [local upstate NY towns](#), [Adirondack mountains](#), [mural art](#), and [the joys of winter](#).

## Technical Skills

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**Programming:** Python, R, & Matlab; Experience with Fortran  
**Geospatial:** ENVI & ArcGIS Pro

**Other:** Adobe Suite, including Premiere Pro, Microsoft Office Suite