

# VANESSA SUN

[vanessasun.com](http://vanessasun.com)

[sunv@mit.edu](mailto:sunv@mit.edu)

## EDUCATION

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**Massachusetts Institute of Technology** Sept. 2021 – Present  
Ph.D. in Geochemistry Sept. 2022

- Advisor: Shuhei Ono

Advanced Study Program, Took Experimental Atmospheric Chemistry class Sept. – Dec. 2021

**Macaulay Honors College at Hunter College, City University of New York** Aug. 2016 – Jun. 2021  
B.A. in Mathematics (Honors) and Studio Art

- Minors: Political Science, Media Studies
- *Magna cum laude*, Phi Beta Kappa

## RESEARCH EXPERIENCES

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**National Renewable Energy Laboratory** May 2022 – Present  
Wind Energy Atmospheric Science Intern

**Massachusetts Institute of Technology** Feb. – May 2022  
Research Assistant, MIT Stable Isotope Geobiology Laboratory

- PI: Shuhei Ono

**Massachusetts Institute of Technology Lincoln Laboratory** Sept. 2021 – May 2022  
Student Technical Assistant, Air Traffic Control

**Youngstown State University/Environmental Collaborative** Jan. – May 2021  
Mathematical Modeling Project Researcher

**Mathematical Sciences Research Institute** Jun. – Jul. 2020  
Undergraduate Student Researcher, Mathematical Sciences Research Institute-Undergraduate Program REU

## EMPLOYMENT & PROFESSIONAL EXPERIENCE

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**Arizona State University/National Aeronautics and Space Administration (NASA) Lucy Student Pipeline Accelerator and Competency Enabler Academy** May – Jul. 2021  
NASA Proposal Writing and Evaluation Experience Student

**New York Math Circle** Sept. – Dec. 2020  
Teaching Assistant

## FELLOWSHIPS, FUNDING, & AWARDS

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**Dean of Science Fellowship** (Full Tuition, Stipend) Covers Fall 2023 – Spring 2026  
MIT School of Science, the Office of the Dean for Graduate Education, and the Department of Earth, Atmospheric, and Planetary Sciences

**GEM Fellowship PhD Science Fellowship Employer Fellow** (Full Tuition, Stipend) Covers Fall 2022 – Spring 2023

National GEM Consortium & National Renewable Energy Laboratory

**Conference funding for organizing the Online Undergraduate Resource Fair for the Advancement and Alliance of Marginalized Mathematicians** (\$16,557.65) Dec. 2021

Massachusetts Institute of Technology, Mount Holyoke College, Rutgers University, Rose-Hulman Institute of Technology, the Society for Industrial and Applied Mathematics, Art of Problem Solving, the American Mathematical Society

**Registration Scholarship for 2021 SACNAS National Diversity in STEM Conference** Oct. 2021

Society for the Advancement of Chicanos/Hispanics and Native Americans in STEM

**University Macaulay Scholar** (Full Tuition) Aug. 2016 – Jun. 2021

Macaulay Honors College

**Lawrence Livermore National Laboratory Computing Group DEI Spotlight** Jun. 2021

Lawrence Livermore National Laboratory

**Lander Hughes Prize** (\$800) Jun. 2021

Hunter College Department of Mathematics and Statistics

**Dean's List** Spring 2021  
Fall 2019  
Fall 2016 – Spring 2018

**Registration Scholarship for 2020 SACNAS Conference** Oct. 2020

Society for the Advancement of Chicanos/Hispanics and Native Americans in STEM

**Association for Women in Mathematics/Math for America Student Essay Contest Honorable Mention** Mar. 2020

Association for Women in Mathematics

**HackMIT Top Ten Overall Projects and Assistive Tech Track Winner** Sept. 2019

HackMIT 2019 Hackathon

**"Best of US Chess 2018 #10" award for top 10 articles written for United States Chess Federation in 2018** Jan. 2019

US Chess (United States Chess Federation)

**Andrew W. Mellon Junior Humanities Fellow** Jun. – Aug. 2018

Andrew W. Mellon Foundation & New York Botanical Garden Humanities Institute

**CUNY Math Challenge Participant and Final Round Contestant** Apr. 2018

City University of New York

## PUBLICATIONS

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*Note: In mathematics, authors are listed alphabetically.*

4. **Sun, V.** *A low-cost computer and sensors for air quality monitoring.* Nature Reviews Earth & Environment **3**, 293 (2022). doi: [10.1038/s43017-022-00297-6](https://doi.org/10.1038/s43017-022-00297-6)
3. Carbonero, A., Gelb, B., Harris, P. E., Miniño, A., **Sun, V.**, Trent, L., Winger, A. "The Online Undergraduate Resource Fair for the Advancement in Academia of Marginalized Mathematicians." *Practices & Policies: Advocating for Students of Color in Mathematics (Book)*, 2021.
2. Carbonero, A., Gelb, B., Miniño, A., **Sun, V.**, Trent, L. *Student-Led Academic Community Organizing.* Mathematical Association of America Math Values Blog. June 10, 2021.

1. Carbonero, A., Gelb, B., Miniño, A., **Sun, V.**, Trent, L. [Advice for Applying to REU Programs \(From Recent Participants!\)](#). E-Mentoring Network in the Mathematical Sciences - connecting students and mentors, American Mathematical Society Blogs. January 20, 2021.

## PRESENTATIONS & WORKSHOPS

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### Research

- Locating Contrails in Satellite Imagery May 6, 2022  
MIT Lincoln Laboratory
- Gaussian Process Approximation to Improve Power Grid Resiliency Oct. 2021  
2021 SACNAS National Diversity in STEM Conference  
*Accepted poster, Did not present*
- Using Gaussian Process Approximation Surrogate Modeling to Protect Power Grids Aug. 19, 2021  
Lawrence Livermore National Laboratory
- Boating on the Mahoning River Apr. 27, 2021  
Youngstown State University Math Modeling Final Project Presentations
- Calculating Monodromy Groups for Modular Curves Jan. 6, 2021  
Mathematical Association of America Undergraduate Student Poster Session at the Joint Mathematics Meetings
- Monodromy Groups for Classical Modular Curves Oct. 20, 2020  
2020 SACNAS - The National Diversity in STEM Conference
- Monodromy Groups of Modular Curves Oct. 10, 2020  
National Association of Mathematicians' Undergraduate MATHFest
- [Automorphism Groups and Monodromy of Classical Modular Curves](#) Jul. 25, 2020  
Mathematical Sciences Research Institute
- [Misinterpretations and Meanings of the Apple, Carnation, and Dandelion and Their Portrayals in Our Culture](#) Aug. 17, 2018  
New York Botanical Garden Humanities Institute

### Expository

- Effect of higher-level independent generator outages in composite-system adequacy evaluation Jul. 21, 2021  
Lawrence Livermore National Laboratory, Squirrel Contingency Analysis Reading Group

### Diversity, Equity, Inclusion

- Lessons from OURFA<sup>2</sup>M<sup>2</sup> Mar. 31, 2022  
Talk Math With Your Friends Colloquium (**Invited**)
- Peer Mentoring and Career-Building Support for Marginalized STEM Undergraduates Workshop Oct. 30, 2021  
11th Annual Out in STEM Conference
- Strength in Community: How helping other math students succeed became an integral part of my STEM journey Jul. 29, 2021  
Lawrence Livermore National Laboratory, Cybersecurity Summer Institute Intern Presentations
- Student-Led Academic Community Organizing: What's Missing and How to Build It Apr. 24, 2021  
Rose-Hulman Undergraduate Math Conference
- Student-Led Academic Community Organizing: What's Missing and How to Build It Apr. 15, 2021  
University of Guam STEM Conference (**Invited**)

## LEADERSHIP

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**Asian American and Pacific Islanders in Geoscience** May 2022 – Present  
Student Branch Leader & Steering Committee Team Member

**GeoLatinas** Jan. 2022 – Present  
GeoSeminars Organizer & Host, geoscience research seminar series

**Online Undergraduate Resource Fair for the Advancement and Alliance of Marginalized Mathematicians** Aug. 2020 – Present  
Founder & Conference Organizer

- Maintain monthly newsletter on opportunities for undergraduate math students (500+ subscribers)
- Led workshop on applying to REU programs (80+ participants), Jan. 2022
- Hosted Experiences Panel at conference, Dec. 2021
- Led workshop on L<sup>A</sup>T<sub>E</sub>X basics (150+ participants), Jun. 2021

**Mathematical Sciences Research Institute - Undergraduate Program 2021** Jun 2021  
Workshop Organizer

- Led 2 workshops for REU students on creating conference posters and Beamer presentations in L<sup>A</sup>T<sub>E</sub>X (**Invited**)

**CUNY Research Scholars Program** Oct. 2020 – Jan. 2021  
Panel Organizer

- Organized and hosted panel about applying to REU programs

## SERVICE & COMMUNITY INVOLVEMENT

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### Peer Review

Reviewer Sept. 2020  
Association for Women in Mathematics

- Reviewed essays for the Association for Women in Mathematics: The First Fifty Years AWM-Springer book

### Panels

Panelist: Undergraduate Research Student Panel Jun. 7, 2022  
Center for Undergraduate Research in Mathematics Professional Development Workshop for faculty (**Invited**)

Panelist: What I Wished I Knew Before My REU May 25, 2022  
Youngstown State University Beginning Undergraduates' Mathematical research Preparation (REU) (**Invited**)

### Conferences

Volunteer Mar. 2021  
Greenlight Climate Festival

Moderator of Plenary Talk and Host for Undergraduate Game Night Mar. 2021  
Math for All in NOLA

Volunteer Judge Sept. 2021  
HackMIT 2021

### Education & Outreach

Letter Writer to Low Income Middle Schoolers  
Letters to a Pre-Scientist

Sept. 2020 - June 2021

Programs Volunteer  
National Museum of Mathematics

Nov. 2019 - Mar. 2020

## **PROFESSIONAL AFFILIATIONS**

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**American Meteorological Society**, Student Member, Dec. 2021 – Present

**Phi Beta Kappa**, Member, Apr. 2021 – Present

**Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS)**, Member,  
Oct. 2020 – Present

**The National Alliance for Doctoral Studies in the Mathematical Sciences (Math Alliance)**, Predoctoral Alliance  
Scholar, Jan. 2020 – Present