

Akanksha Singh

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🌐 LinkedIn

Education

PhD, University of Maryland, College Park

Atmospheric and Oceanic Sciences

Expected Aug 2025

GPA: 3.95

MS, Indian Institute of Science Education and Research Bhopal

Earth and Environmental Sciences

2018 – 2019

GPA: 4.0

BS, Indian Institute of Science Education and Research Bhopal

Earth and Environmental Sciences

2014 – 2018

GPA: 3.75

Fellowships

College of Computer, Mathematical, and Natural Sciences (CMNS) Dean's Fellowship

University of Maryland, College Park

2020

Innovation in Science Pursuit for Inspired Research (INSPIRE) Fellowship

Issued by Indian Government

2014-2019

Mathematics of Information Technology and Complex Systems (MITACS) Fellowship

Issued by Canadian Government

2018

Academic Research Experience

Doctoral Dissertation

2019 – Present

Atmospheric and Oceanic Sciences, University of Maryland

- **Title:** Insights into Near-Surface Ozone: Production Regimes, Source Apportionment, and Exposure Inequalities across the Contiguous US
- Installed, maintained, and ran the air quality model CAMx to simulate tropospheric chemistry
- Analyzed satellite (OMI, TEMPO), aircraft, and ground-based air quality data (AQS, PAMs)
- Conducted research on tropospheric ozone chemistry, delivering policy-driven reduction strategies
- Investigated the impact of carbon capture technology on future air quality
- Used EJScreen to do a socioeconomic analysis of air pollution exposure inequality
- Analyzed the impact of air quality on human health through epidemiological studies

Site Operator for CASTNET and NADP Network

Jul 2023 – Nov 2023

Beltsville, Maryland

- Conducted weekly monitoring of EPA's air quality monitoring program
- Collected rainwater sample for wet and dry deposition analysis

Master's Thesis

2018 – 2019

Department of Earth and Environmental Sciences, IISER, India

- **Title:** Aerosols from Traditional Cooking: Exfiltration Rates and Health Impacts
- Measure the extent of exfiltration of PM2.5 and Black Carbon from traditional cookstove aerosol emissions
- Estimate lung function distress as a consequence of exposure to aerosols resulting from burning of solid fuels for indoor cooking by women and children

Specialized Skills

Programming Languages: Python (expert), Shell Scripting (proficient), High Performance Computing (proficient), Fortran (working knowledge)

Softwares: CAMx, Adobe Photoshop, Adobe Illustrator, Latex, MATLAB

Internship Research Experience

- MITACS Globalink** May 2018 – Aug 2018
School of Education and Social Work, TRU, British Columbia, Canada
- Developed a teaching guide for educators to teach air quality in schools
 - Created a website for real-time monitoring of community-run PurpleAir PM 2.5 sensors
 - Utilized PurpleAir networks for assessing local air quality during Canadian wildfires
- Interdisciplinary Programme in Climate Sciences** May 2017 – Aug 2017
IIT Bombay, India
- Researched hygroscopic growth of atmospheric aerosols
- Earth and Environmental Sciences** May 2016 – Aug 2016
IISER Bhopal, India
- Derived site specific Mass Attenuation Coefficient (MAC) over a National Park in India

Teaching Experience

- Guest Lecturer** Oct 2023
University of Maryland, College Park
- COMM 330: Argumentation and Public Policy
- Teaching Assistant** Aug 2020 – Dec 2020
University of Maryland, College Park
- AOSC 123: Causes and Implications of Global Change
- Teaching Assistant** Jan 2017 – May 2017
IISER Bhopal
- HSS 101: Basics of Communication Skills

Science Policy Efforts

- Geoscience Congressional Visits Day (Geo-CVD)** 2024
Washington, D.C.
- AMS Science Policy Colloquium (SPC)** 2024
Washington, D.C.
- Co-Founded A Science Policy Group for Graduate Students (UMD-SPG)** 2024
UMD, College Park

Awards & Travel Grants

- NSF Financial Award for attending AMS Science Policy Colloquium** 2024
Washington, D.C.
- Travel Award for attending the 18th Annual Graduate Climate Conference** 2024
Seattle, Washington
- Helmut Landsberg Scholarship for Outstanding Student Seminar** 2022
University of Maryland, College Park
- UMD AOSC Travel Grant for attending American Meteorological Society Conference** 2022
University of Maryland, College Park
- Helmut Landsberg Scholarship for Outstanding Service to the Program** 2021
University of Maryland, College Park
- Gold Medal for Highest GPA in Graduating Department** 2019
IISER, India

Publications and Articles

Singh, A. : "An Immigrant Scientist's Experience at the AMS Science Policy Colloquium" *The Front Page, AMS, 2024 July 9*

Singh, A. , Ring, A.M., He, H., Allen, D.J., Dickerson, R.R., Salawitch, R.J., Canty, T.P.: "Inferring Near-Surface Ozone Production Regimes: Insights from using Satellite Retrievals over the Contiguous US" *Submitted to Atmospheric Environment (Preprint Available on ESS Open Archive)*

Nirmalkar, J., Haswani, D., **Singh, A.** Kumar, S., Raman, R.S.: "Concentrations, transport characteristics, and health risks of PM2.5-bound trace elements over a national park in central India" *J Environ Management, 2021 Sep 1*

Singh, A. , Ring, A.M., He, H., Allen, D.J., Carrie Nobles, Dickerson, R.R., Salawitch, R.J., Canty, T.P.: "Utilizing CAMx and EJSCREEN for Source Apportionment and Socioeconomic Analysis of Ozone and PM2.5 Exposure Inequalities over the Contiguous US" *Manuscript in Prep*

Singh, A. , Ring, A.M., He, H., Allen, D.J., Dickerson, R.R., Salawitch, R.J., Canty, T.P.: "Near-Surface Ozone Production Regimes: Using TEMPO Satellite Retrieval over the Contiguous US" *Manuscript in Prep*

Research Presentations

1. "Inferring Ozone Production Regimes over the Continental United States", *AMS's 26th Conference on Atmospheric Chemistry*, Baltimore, MD, 2024; *DC Area Atmospheric Composition and Modeling Workshop*, George Mason University, DC, 2023
2. "Ozone, NOx, and HCHO chemistry over the continental US: A comparison between Air Quality Models and Satellite Observations", *AMS's 25th Conference on Atmospheric Chemistry*, Denver, CO, 2023; *Earth System Observation and Modeling Graduate Student Symposium*, George Mason University, DC, 2023; *NCWCP-UMD Mini Conference*, NOAA Center for Weather and Climate Prediction, MD, 2023
3. "Assessment of Potential Air Quality Impacts of Point Source Carbon Capture Deployment", *AMS's 26th Conference on Atmospheric Chemistry*, Baltimore, MD, 2024 (coauthor)
4. "Ambient Temperature During Susceptible Windows of Spermatogenesis and Impact on hCG+ Pregnancy in an Infertility Treatment Population", *Annual Meeting of the Society for Pediatric and Perinatal Epidemiologic Research (SPER)*, Austin, 2024 (coauthor)
5. "Heat Exposure During Susceptible Windows of Spermatogenesis and Sperm Epigenetic Age", *Annual Meeting of the Society for Pediatric and Perinatal Epidemiologic Research (SPER)*, Austin, 2024 (coauthor)

Service

Department Representative, Graduate Student Government, UMD	2024-2025
Organiser, Student Run Science Policy Group, UMD	2024-
Organiser, International Students Committee, Communications Committee, Graduate Labor Union, UMD	2022-
Student Seminar Coordinator, AOSC, UMD	2020-2022
Treasurer, Metograds: AOSC Graduate Student Club, UMD	2020-2021
Elected Academic Senate Representative, IISER	2017-2018
Elected Secretary, Fine Arts and Literary Council, IISER	2016-2017
Editorial Staff, University Magazine, IISER	2014-2017