

# Akanksha Singh

singhak@umd.edu

## Education

---

|   |                |
|---|----------------|
| <b>PhD, University of Maryland, College Park</b>  | 2019 – Current |
| <i>Atmospheric and Oceanic Sciences</i>   | GPA: 3.95      |
| <b>MS, Indian Institute of Science Education and Research Bhopal</b>                      | 2018 – 2019    |
| <i>Earth and Environmental Sciences</i>   | GPA: 4.0       |
| <i>Thesis: "Aerosols from Traditional Cooking: Exfiltration Rates and Health Impacts"</i> |                |
| <b>BS, Indian Institute of Science Education and Research Bhopal</b>                      | 2014 – 2018    |
| <i>Earth and Environmental Sciences</i>   | GPA: 3.75      |

## Research Experience

---

|  |                     |
|--|---------------------|
| <b>Doctoral Dissertation</b>   | 2019 – present      |
| <i>Atmospheric and Oceanic Sciences, University of Maryland</i>  |                     |
| <ul style="list-style-type: none"><li>• Installed, maintained, and ran the air quality model CAMx to simulate tropospheric chemistry</li><li>• Analyzed satellite, aircraft, and ground-based air quality data</li><li>• Conducted research on tropospheric ozone chemistry, delivering policy-driven reduction strategies</li><li>• Investigated the impact of carbon capture technology on future air quality</li><li>• Analyzed the impact of air quality on human health through epidemiological studies</li></ul> |                     |
| <b>Master's Thesis</b>   | 2018 – 2019         |
| <i>Department of Earth and Environmental Sciences, IISER, India</i>  |                     |
| <ul style="list-style-type: none"><li>• Measure the extent of exfiltration of PM<sub>2.5</sub> and Black Carbon from traditional cookstove aerosol emissions</li><li>• Estimate lung function distress as a consequence of exposure to aerosols resulting from burning of solid fuels for indoor cooking by women and children</li></ul>   |                     |
| <b>Site Operator for CASTNET and NADP Network</b>  | Jul 2023 – Nov 2023 |
| <i>Beltsville, Maryland</i>  |                     |
| <ul style="list-style-type: none"><li>• Conducted weekly monitoring of EPA's air quality monitoring program</li><li>• Collected rainwater sample for wet and dry deposition analysis</li></ul>   |                     |
| <b>MITACS Globalink Research Internship</b>  | May 2018 – Aug 2018 |
| <i>School of Education and Social Work, TRU, British Columbia, Canada</i>  |                     |
| <ul style="list-style-type: none"><li>• Developed a teaching guide for educators to teach air quality in schools</li><li>• Created a website for real-time monitoring of community-run PurpleAir PM 2.5 sensors</li><li>• Utilized PurpleAir networks for assessing local air quality during Canadian wildfires</li></ul>  |                     |
| <b>Research Internship</b>   | May 2017 – Aug 2017 |
| <i>Interdisciplinary Programme in Climate Sciences, IIT Bombay, India</i>  |                     |
| <ul style="list-style-type: none"><li>• Researched hygroscopic growth of atmospheric aerosols</li></ul>  |                     |
| <b>Research Internship</b>   | May 2016 – Aug 2016 |
| <i>Department of Earth and Environmental Sciences, IISER, India</i>  |                     |
| <ul style="list-style-type: none"><li>• Derived site specific Mass Attenuation Coefficient (MAC) over a National Park in India</li></ul>   |                     |

## Teaching Experience

---

|   |                     |
|---|---------------------|
| <b>Teaching Assistant</b>   | Aug 2020 – Dec 2020 |
| <i>University of Maryland, College Park</i>   |                     |
| <ul style="list-style-type: none"><li>• AOSC 123: Causes and Implications of Global Change</li></ul>  |                     |
| <b>Teaching Assistant</b>   | Jan 2017 – May 2017 |
| <i>IISER Bhopal</i>   |                     |
| <ul style="list-style-type: none"><li>• HSS 101: Basics of Communication Skills<sub>1</sub></li></ul> |                     |

## Specialized Skills

---

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

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

## Awards & Honors

---

|   |           |
|---|-----------|
| <b>Helmut Landsberg Scholarship for Outstanding Student Seminar</b><br><i>University of Maryland, College Park</i>              | 2022      |
| <b>Helmut Landsberg Scholarship for Outstanding Service to the Program</b><br><i>University of Maryland, College Park</i>       | 2021      |
| <b>College of Computer, Mathematical, and Natural Sciences Dean's Fellowship</b><br><i>University of Maryland, College Park</i> | 2020      |
| <b>Gold Medal for Highest GPA in Graduating Class</b><br><i>IISER, India</i>  | 2019      |
| <b>Mathematics of Information Technology and Complex Systems Fellowship</b><br><i>Issued by Canadian Government</i>             | 2018      |
| <b>Innovation in Science Pursuit for Inspired Research (INSPIRE) Fellowship</b><br><i>Issued by Indian Government</i>           | 2014-2019 |

## 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, NO<sub>x</sub>, 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. Heat Exposure During Susceptible Windows of Spermatogenesis and Sperm Epigenetic Age, *Society for Epidemiology Research conference*, Austin, 2024 (coauthor)

## Service

---

- Student Seminar Coordinator, 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

## Publications

---

**Singh, A.** , Ring, A.M., He, H., Allen, D.J., Dickerson, R.R., Salawitch, R.J., Canty, T.P.: "The Ozone Puzzle: Inferring Ozone Production Regimes over the continental US" *Submitted to JGR Atmospheres*

Nirmalkar, J., Haswani, D., **Singh, A.** Kumar, S., Raman, R.S.: "Concentrations, transport characteristics, and health risks of PM<sub>2.5</sub>-bound trace elements over a national park in central India" *J Environ Manage.* 2021 Sep 1