

Irfan Karim

Graduate Research Assistant
Department of Earth and Atmospheric Science
University of Houston, TX, 77004, USA
☎ (832) 993-4507
✉ ikarim2@uh.edu



Education

University of Houston, Texas, USA

PhD Candidate Atmospheric Sciences

CGPA: 3.66

Dissertation: Characterizing Emission Sources of CO₂ and CH₄ in Houston using isotopic δ¹³C signatures.

Research Supervisor: Dr. Bernhard Rappenglueck

Jan 2021 - Nov 2025

Government College University, Lahore, Pakistan

M.Phil. Environmental Science

CGPA: 3.17

Thesis: Role of BACIP's Energy Efficient Products to Induce Sustainable Development Practices among the communities of the Hunza District (Gilgit-Baltistan).

Sep 2011 - Dec 2013

Government College University, Lahore, Pakistan

BS. Hons. Environmental Science

Division: 1st

Thesis: Man Induced disturbances on the status of Birch Forest around Blue lake, Naltar Valley Gilgit.

Sep 2007 - Aug 2011

Professional Experience

- Institute for Climate and Atmospheric Science,**
Research Assistant
University of Houston Texas, USA
- Pakistan Poverty Alleviation Fund, Islamabad**
- *Assistant Manager*
Environment and Social Management
- Aga Khan Planning and Building Service of Pakistan**
- *Water Analyst*
Physical, biological, and chemical Testing.

Jan 2021- Nov 2025

June 2014 – Dec 2020

June 2011 - Sep 2012

Research Interests and Skills

- Urban air quality (Field monitoring, Air sampling and analysis)
- Atmospheric chemistry (HYSPLIT)
- Remote sensing (QGIS, R, Python, Google earth engine)

Research Publication:

- Karim, I., & Rappenglück, B.** (2023). Impact of COVID-19 lockdown regulations on PM_{2.5} and trace gases (NO₂, SO₂, CH₄, HCHO, C₂H₂O₂, and O₃) over Lahore, Pakistan. *Atmospheric Environment*, 119746. <https://doi.org/10.1016/j.atmosenv.2023.119746>
- Tanzina, A., Rappenglück, B., **Karim, I.**, et al. (2025). Box-modeling of O₃ and its sensitivity towards VOCs and NO_x in Mexico City under altered emission conditions. *Atmospheric Environment* (Accepted with minor revisions).
- Alam, J., **Karim, I.**, et al. (2025). Seasonal dynamics and trends in air pollutants: A comprehensive analysis of PM_{2.5}, NO₂, CO, SO₂, and O₃ in Houston, USA. *Air Quality, Atmosphere & Health*

Manuscripts Reviews:

- Air Quality, Atmosphere & Health (11)

Membership

- 2021 - 2024, American Meteorological Society (AMS)
- 2024 - 2025, European General Union (EGU)

Certifications/Trainings

1. Hewlett Packard Enterprise
Introduction to Programming Using Python Introduction to Programming Using Python - Aug 2021
2. NOAA: National Oceanic & Atmospheric Administration
HYSPLIT - June 2021

Conference Presentations

- Karim I., Rappenglück B. (2024): Air Quality Changes in Lahore, One of the Most Polluted City Worldwide During COVID 19 Lockdowns, EGU Joint Assembly, Vienna/Austria, 14.-19.04.2024. <https://doi.org/10.5194/egusphere-egu24-13414>, 2024
- Karim I., Rappenglueck B. (2024): Impact of Covid-19 Lockdown Regulations on Air Quality over One of the Top Polluted City in the World, 104th Annual Meeting of the American Meteorological Society, 28.01.-01.02.2024, Baltimore MD/USA
- Karim I., Rappenglück B. (2022): Case study analyses of PM_{2.5} in Lahore, Pakistan, using in-situ air quality and remote sensing data, 102nd Annual Meeting of the American Meteorological Society, 23-27.01.2022, Houston TX/USA

Honors and Awards

- Graduate Tuition Fellowship 2021 - 2024
- Outstanding Academic Achievement Award in Atmospheric Science 2024 - 2025
- S. Javaid Anwar Scholarship, University of Houston Alumni Association 2025
- Texas Public Education Grant (TPEG) 2023 - 2025
- Awarded 3rd Place Prize for Outstanding Poster Presentation at UH Student Research Conference 2024
- NSM Graduate Student Conference Travel Award at University of Houston 2024

References:

1. **Dr. Bernhard Rappenglueck**
Professor of Atmospheric Chemistry, University of Houston, Texas USA
Office: Science & Research 1, 426J
Contact: brappenglueck@uh.edu - 713-743-2469
2. **Dr. Xun Jiang**
Professor of Atmospheric Science, University of Houston, Texas USA
Office: Science & Research 1, 432D
Contact: xjiang7@uh.edu - 713-743-3156
3. **Dr. Shuhab D. Khan**
Professor of Geology (Tectonics, Geological Remote Sensing) University of Houston
Phone: 713-743-5404
Email: sdkhan@uh.edu
Science & Research 1, 234. University of Houston, Texas
4. **Dr. Amin U Khan**
SDSC- GC University Lahore
Phone/Email: +92 42 9213341/ Akeco@yahoo.com
Sustainable Development Study Centre, GC University, Katcheri Road, Lahore