

SHWETA YADAV

[Fulbright Alumna & INYAS member]

Scopus ID: 55490421700**ORCID ID:** <https://orcid.org/0000-0002-7455-6461>**Nationality:** Indian**Date of Birth:** December 6, 1985**Designation:** Associate Dean, International Affairs, CUJ and Assistant Prof., Department of Environmental Sciences, CUJ; Adjunct Faculty, Environmental Engineering Division, Department of Civil Engineering, IIT Madras, Chennai.**Office Address:** D-35, DDE Building, Central University of Jammu, Jammu & Kashmir, India**Contact Details:** +91-8700244971; shweta.evs@cujammu.ac.in; assocdean.ia@cujammu.ac.in**Education**

Postdoctoral Research (Atmospheric Science), MEAS, NCSU, Raleigh, NC, USA (2017-2018)

[Project title: Influence of aerosol sources on the Ice Nucleating Particles spectrum over North-Western Himalayas: Implications on Regional Climate]

PhD (Environmental Science), JNU, New Delhi (2007-2012)

[Thesis title: Quantitative Estimation of Elements and Carbonaceous Species in Ambient Aerosols and their Coupling with Local Meteorological Factors]

MSc (Environmental Science), JNU, New Delhi (2004-2006)[FGPA 8.51 on 0-9 scale (A⁺ Grade)]

[Dissertation title: Correlation between Ground Level Ultra-Violet Radiation & Lower Atmospheric Aerosol Load with other Meteorological Parameters]

Employment

[Since 07/2017]: Sr. Assistant Professor, Department of Environmental Sciences, Central University of Jammu, India

[07/2013 – 07/2017]: Assistant Professor, Department of Environmental Sciences, Central University of Jammu, India

[01 – 07/2013]: Assistant Professor, Department of Environmental Studies, Visva-Bharati, West Bengal, India

Institutional Responsibilities

- Associate Dean, International Affairs
- Convener, EcoClub
- Nodal Officer, Mission Life
- Convener, Collaboration and Community Division, Research and Development Cell
- Coordinator, Himalayan Aerosol Research Instrumentation Facility [Joint facility (CUJ-JKPCC) under National Clean Air Programme]
- Member, School Board, School of Life Sciences
- Member, Board of Studies, Department of Environmental Sciences
- Member, Department Technical Committee

Awards

- Fulbright Kalam Climate Postdoctoral Fellowship Award (2017-2018), USIEF.
- SERB International Travel Support (ITS) award for AAAR – 2022 in Raleigh, NC, USA (3rd – 7th October, 2022).
- SERB International Travel Support (ITS) award for EAC – 2019 in Gothenburg, Sweden (25th – 30th August, 2019).
- University Grant Commission-Junior Research Fellowship in Environmental Sciences, December 2005.

Honors/recognitions

- Co-Coordinator, DST "Promotion of University Research and Scientific Excellence (PURSE)" grant titled "Drone technology based real time air pollution online monitoring at dumping sites in Jammu Region - Adsorption & Sensors application using innovative biomaterials"; INR 6.5 crores.
- Member, Indian National Young Academy of Sciences (IN-YAS), INSA, New Delhi (2023-2028).
- Member, Air Pollution Measurement Unit in the Department of Science & Technology's Technical Air Resource Unit for Scientific Analysis, Management and Coordination (2022).
- Nodal Faculty for Jammu & Kashmir in National Knowledge Network on Aerosols to support National Clean Air Programme (2019-till present).
- Institute of Repute representative and technical partner to Jammu & Kashmir Pollution Control committee to support National Clean Air Programme (2021-till present).
- Member, City level implementation Committee for National Clean Air Programme.
- Subject expert member in District level expert appraisal committee on EIA for District Samba, J&K (2017-2018).

Area of Specialization: Aerosols, Air quality, Human Health and Climate

- Role of aerosols as ice nucleating particles in Aerosol-cloud interactions.
- Bioaerosols: climate and health implications.
- Aerosol characterization for Persistent Organic Pollutants (POPs) and source tracers.
- Air pollution and air quality studies.

Current topic of research

Study of physical, chemical, biological, cloud forming and ice nucleating properties of particulate matter to develop their process level understanding in the North-Western Himalayan Region (NWHHR).

Professional Trainings

- Training in "Traditional and Modern methods for Bioaerosol analysis" organized by Paerl Lab, Jordan Hall, NC State University, Raleigh, NC, USA (13th August – 24th August, 2018).
- Laboratory Chemical Waste Management Training organized by Environmental Health and safety (EHS) Centre, NC State University, Raleigh, NC, USA (27th February, 2018).
- Training in Chemical Hygiene Plan organized by Environmental Health and safety (EHS) Centre, NC State University, Raleigh, NC, USA (19th December, 2017).
- Training in Hazardous Waste Management organized by Environmental Health and safety (EHS) Centre, NC State University, Raleigh, NC, USA (18th December, 2017).
- Compressed Gas Regulator Safety Training organized by Environmental Health and safety (EHS) Centre, NC State University, Raleigh, NC, USA (18th December, 2017).
- Principles of Radiation Safety - Radioactive material safety training organized by Environmental Health and safety (EHS) Centre, NC State University, Raleigh, NC, USA (30th November, 2017).
- Training to handle/run various instruments: continuous monitors, particulate (high and low volume) samplers and cascade impactors for sampling, TD-GCMS, ICP-OES, TOR/TOT analyzer, SEM-EDS, CHNS-O analyzer, optical transmissometer, Ion Chromatograph for aerosol analysis in Advanced Instrumentation Research Facility and SES lab, JNU (2008-2009).
- "XXIII National Training Programme in Electron Microscopy for Scientific Investigators, 2007" (Basic & Advance Course) organized by AIIMS, New Delhi – 110029 (12th November 2007 – 24th November 2007).

Publications (in peer reviewed international journals): 2

Five best recent publications:

- ***Mahant et al., 2023. An open-hardware community ice nucleation cold stage for research and teaching. HardwareX 16, e00491, <https://doi.org/10.1016/j.ohx.2023.e00491>***
- ***Yadav et al., 2022. Bioaerosol Diversity and Ice Nucleating Particles in the North- Western Himalayan Region J. Geophys. Res. Atmos. 127, e2021JD036299, <https://doi.org/10.1029/2021JD036299>***
- ***Yadav et al., 2022. Current status of source apportionment of ambient aerosols in India. Atmos. Environ. 274, 118987, <https://doi.org/10.1016/j.atmosenv.2022.118987>***

- **Yadav et al.**, 2020. *Aerosol-associated non-polar organic compounds (NPOCs) at Jammu, India, in the North-Western Himalayan Region: seasonal variations in sources and processes*. *Environ. Sci. Pollut. Res.* 27, 18875-18892. <https://doi.org/10.1007/s11356-020-08374-3>
- **Yadav et al.**, 2019. *Characterization of Ice-Nucleating Particles Over Northern India*. *J. Geophys. Res. Atmos.* 124, 10467–10482. <https://doi.org/10.1029/2019JD030702>

Book Chapter

- Sharma, K. and Yadav, S. (2023) “Air Quality Monitoring Using Geospatial Technology and Field Sensors” in Springer Nature Book “Geospatial Analytics for Environmental Pollution Modelling”; ISBN 978-3-031-45299-4 ISBN 978-3-031-45300-7 (eBook) <https://doi.org/10.1007/978-3-031-45300-7>
- Yadav S. and Kumar, A. (2019). Chapter 3. Air Pollution: Types, Sources and Health Implications, In: Recent Trends and Advances in Environmental Health BISAC: SC1026000. ISBN:978-1-53615-661-4

Research Projects (Completed and Ongoing)

- [2023-2027]: Indo-Swiss Joint Research grant, SNSF- MoES: “ICE nuCleating paRticle and cloUd condensation NuClei properties in the north-western Himalayas (ICE-CRUNCH)“
Role: Principal Investigator **Amount: (CHF 349'925 and INR 1.5 crores)**
- [2023-2026]: SERB CRG: “Thermodynamic evolution of secondary inorganic aerosols in Dhauladhar region of the North-Western Himalaya“
Role: Co-Principal Investigator **Amount: (INR: 6000000)**
- [2021-2022]: CSTEP: “ Development of emission inventories for non-attainment cities (Jammu and Srinagar) in J&K”
Role: Principal Investigator **Amount: (INR: 450000)**
- [2020-2024]: JKPCB: “Source apportionment of aerosols and carrying capacity in NAC of Jammu/Srinagar” (Phase I)
Role: Principal Investigator **Amount: (INR: 21876000)**
- [2019-2021]: “Relation between Pathogenic Bio-aerosol and Biotic Stress of Crop - A Case Study for Yellow Rust Fungus of Wheat”
Role: Project Partner **Amount: (INR: 4500000)**
- [2015-2018]: UGC: “Investigation of Multi-Scale Temporal Variations and Trend in the Mass, Composition and Sources of Carbonaceous Aerosols in Jammu, an Urban Location in the Foothill Region of North-Western Himalayas”
Role: Principal Investigator **Amount: (INR: 1597000)**

PhD Supervision (Ongoing)

- Sarita Bamotra [Studies on Mass-Closure and Source Apportionment of PM_{2.5} Aerosol in Jammu City of J&K(UT) India]; [Thesis Submitted]
- Kiran Kumari [Characterization and Implications of Bioaerosols in Jammu region of the North Western Himalayas] [Expected Submission: February, 2024]
- Konika Sharma [Study of carbonaceous aerosol dynamics in Jammu (J&K)]; [Expected Submission: July, 2025]

Teaching activities (Courses developed and taught)

M.Sc. (Environmental Sciences)

- Atmospheric science and climate change
- Climatology
- Instrumentation and analytical techniques
- Environmental chemistry

- Environmental Impact Assessment (Shared)
- Fundamentals of Ecology
- Introduction to atmospheric sciences (Sem I, Elective)
- Advances in atmospheric environment (Sem II, Elective)

PhD Course Work

- Research methodology
- Advanced tools and techniques in Environmental Sciences
- Advanced atmospheric chemistry (Elective)

Supervision of Junior Researchers and graduate students

M.Sc. Supervision: Have supervised > 45 students for MSc Dissertation

Synergistic/Professional activities

Membership: Member, Indian Science Congress (Since 2016);

Peer Reviewer Scientific Articles: JGR: Atmospheres, Atmospheric Environment, Environment Science and Pollution Research, Journal of Atmospheric Chemistry, Frontiers in Environmental Sciences.

Review Editor in Frontiers in Sustainable Cities - Climate Change and Cities.

Grant Proposal Reviewer: Fulbright Doctoral Research Awards [USIEF]

Participation in International Conference/Seminar

- Oral: “Characteristics and Sources of Ice Nucleating Particles in the North-Western Himalayas”. [SHWETA YADAV, Nathaniel Curtis, Rebecca Venezia, Kiran Kumari, Sunandan Mahant, Ankit Tandon, Bruce Moffett, Ryan Paerl, Markus Petters] in AAAR 40th Annual Conference to be held in Raleigh, North Carolina [3 October - October 7, 2022].
- Oral: “Ice Nucleating Particles and Bioaerosol Diversity in the Himalayan Region” in European Aerosol Conference (EAC) 2019 in Gothenburg, Sweden (August 25 - 30, 2019).
- Oral: “Ice Nucleating Particle Properties of Aerosols In The Himalayan Region” in Conference on Aerosol Impacts: Human Health to Climate Change in Centre for Atmospheric Sciences, Indian Institute of Technology, Delhi, organized by IASTA (November 26 – 28, 2018).
- Oral: Fulbright Visiting Scholar Enrichment Seminar, “*Leveraging Strategic Innovation and Entrepreneurship for Long Term Success*” in Hotel Kimpton solamar, San Diego, California (December 13-16, 2017).
- Oral: INP measurements using immersion mode freezing, GEOPATHS Open House program, Petters lab, NC State University, Raleigh, NC, USA (November 30, 2017).
- Oral: 2nd Annual Showcase of NC State Women Faculty's Research, Creativity, and Scholarship event in the College of Textiles, NC State Centennial Campus, USA (November 1, 2017).
- Poster: “Preliminary Assessment of Aerosol Associated Organic Tracers in Rural and Urban Location of Western Himalayas” in 36th American Association for Aerosol Research (AAAR) Annual Conference held at the Raleigh Convention Center, Raleigh, North Carolina, USA (October 16-20, 2017).

Participation in National and State level Conferences/Workshops/Seminars

- Presented on “Ice Nucleating Particle Properties of Aerosols In The Himalayan Region” in Conference on Aerosol Impacts: Human Health to Climate Change in Centre for Atmospheric Sciences, Indian Institute of Technology, Delhi, organized by IASTA (November 26 – 28, 2018).
- Participated in two days Workshop on “*Transacting Students’ Engagement for Rural Community Development*” organized at Central University of Jammu in collaboration with National Council of Rural Institutes (NCRI), Ministry of Human Resources and Development, Hyderabad (April 26-27, 2017).

Plenary/Invited Talks

- Invited talk on “Challenge of Anthropogenic Biomass Burning led Air Pollution in India” in One Day symposium Commemorating National Pollution Control Day 2023 organized by Jammu & Kashmir Pollution Control Committee, UT of J&K on 2nd December, 2023.
- Invited talk on “Role of Youth in Sustainable Development” in International Youth Day Celebration organized by Red Ribbon Club, CUJ and J&K Aids control Society, Govt. of J&K on 31st October, 2023.
- Invited talk on “National Research Funding Opportunities and Grant Writing” in [FDPCAS-2023] Two -week Faculty Development Programme organized by the Department of Chemistry & Allied Sciences, Central University of Jammu on 30th October, 2023.
- Invited talk on “Igniting young minds to S.T.A.R.T. "Science, Technology, Augment, Research, and Training" Special focus on National & International Fellowship Opportunities” in Lecture series “Embarking on the Research and Industrial Odyssey: Explore, Experiment, Innovate and Celebrate Discoveries” organized by IIT Jammu on 13th October, 2023.
- Invited talk on “Ozone Recovery and Climate Action: Present Status and Way Forward” in Ozone Day Workshop organized by Jammu & Kashmir Pollution Control Committee, UT of J&K on 16th September, 2023.
- Plenary talk on “Fundamentals of Aerosol-Cloud Connection” in Workshop organized by CACS IIT Madras and INYAS in Munnar, Kerala on 26th July, 2023.
- Invited talk on “Unveiling Climate Uncertainty: the Crucial Role of Ice Nucleating Particles in Aerosol-Cloud-Climate Interactions” in Center for Atmospheric and Climate Sciences, IIT Madras, Chennai on 22nd June, 2023.
- Invited talk on " The forgotten story of Organic Carbon in the atmosphere: Key to understand role in Climatic Processes" in the MOD Lab, Materials Group, Bhabha Atomic Research Center, Mumbai on 19th June, 2023.
- Invited to moderate a panel discussion on “Peer-Reviewed Preprints: Benefits and Limitations for Young Indian Researchers” organized by INYAS on June 9, 2023
- Invited for Panel Discussion on “Towards more harmony and inclusiveness in Higher Education Institutions of India” organized by SPSTI in association with the Forum of Retired Vice Chancellors and Directors (FRVCD) and Chandigarh chapters of INSA, NASI and INYAS on 27th May, 2023.
- Invited talk on “Lifestyle for Environment: A Sustainable Solution to Climate Induced Disasters” in National Seminar on “Climate Change and Disaster Risk Reduction: Making Sustainability a way of life” organized by Govt. Degree College for Women, Kathua (JKUT) on 19th May, 2023.
- Invited talk on “Understanding the STEM Gap & ways to fill it: Women and Girls in Science, Technology, Engineering and Mathematics” in National Conference on “Science and Technology in Sustainable Development with Women Empowerment” organized by GDC Ramgarh in collaboration with Indian Science Congress Association, Jammu Chapter on 24th March, 2023.
- Invited as Jury member in Young Scientist Conference (YSC), India International Science Festival (IISF) 2023 held at MANIT, Bhopal on 21-24 Jan., 2023.
- Invited talk on “Multi-sectoral Strategies for Clean Air Goals and Clean Energy Transition to achieve Sustainable Development through Women Empowerment” in Women Science Congress of 108th Indian Science Congress organized by R.T.T.M Nagpur University, Nagpur (3rd – 7th January, 2023) on 6th January, 2023.
- Invited talk in the Department of Environmental Sciences & Engineering (ESE) and Department of Chemistry, Gillings School of Global Public Health, University of North Carolina at Chapel Hill on 14th October, 2022 and established a new collaboration with Professor Jason D. Surratt.

- Invited talk on “Understanding of ambient aerosols will lead to better understanding of climate change over the Himalayas” in an online webinar on Disaster Risk Reduction organized by National Institute of Disaster, MHA, GoI on 7th December, 2022.
- Invited talk on “ Climatic Disasters in the Himalayas” in a 3 days online Training on Disaster Risk Reduction jointly organized by National Institute of Disaster management and Central University of Jammu (J & K) on 23rd September, 2022.
- Invited talk on “Clean Air Goals in India: Importance and Status of Source Apportionment Studies” in a State Level Function on “International Day of Clean Air for blue skies” organized by Punjab Pollution Control Board on 7th September, 2022.
- Invited talk on “Chemical Characterization of Particulate Matter and Source Apportionment” in AICTE Virtual School on Atmospheric Pollutants and Their Impact organized by IIT Madras on 8th March 2022.
- Invited Expert lecture in an International conference on sustainable energy education (ICSEE), 2022 On Reimagining the purpose of Energy Education beyond Conservation organized by Department of education, University of Kerala in collaboration with Energy management centre, Govt. of kerala on 11th January, 2022.
- Series of invited talks in Faculty Induction Programme-05 organized by the UGC-Human Resource Development Centre (HRDC), Guru Nanak Dev University, Amritsar on 8th January, 2022, 22nd October, 2021, 18th August, 2021, 20th February, 2021 and 24th November, 2020.
- Invited talk on “Targets & Challenges of National Clean Air Programme: Role & Responsibility of Media” in orientation programme, Department of Mass Communication and New Media, CUJ, 10th December, 2020.
- Invited talk on “Vegan Diet: a solution for better environment” in Vegan Outreach Webinar - Food Planet Health, Vegan outreach and NSS, 25th September, 2020.
- Invited talk on “Characteristics of Aerosols in the Himalayan Region” in Centre for Incubation, Innovation, Research and Consultancy, Bengaluru, Karnataka (December 19, 2019).
- Plenary talk on “Bio-aerosols as potential Ice Nucleators in the Himalayan Region” in Golden Jubilee National Symposium (CIPME-2019)” in Guru Nanak Dev University, Amritsar (March 8, 2019).
- Invited talk on “Resurgence in INP research: Bioaerosols, pollution or dust?”, Environmental and Water Resources Engineering Division., IIT Madras, Chennai (February 15, 2019).
- Plenary talk on “Multi-Scale Temporal Dynamics in Carbonaceous Aerosols over North-Western India” in two day National Conference on ‘Change in Cryosphere and Impact on Ecosystem Services and Rural Livelihood: Climate change, agriculture and sustainable development in the Himalayan region, Institute of Mountain Environment, Bhaderwah Campus, University of Jammu (November 21-22, 2016).

Outreach activities

- Jury member, Young Scientist Conference, India International Science Festival, DBT THSTI - RCB Campus (17th – 20th January, 2024).
- Jury member, Young Scientist Conference, India International Science Festival, MANIT, Bhopal (21st - 24th January, 2023).
- Participated in Third Roscoe R. Braham seminar on “Convective Precipitation Experiment (COPE)” by Professor Sonia Lasher-Trapp from University of Illinois at Urbana-Champaign (October 16, 2017).

- Participated in interactive seminar on “Mentor/mentee relationship: Communicating Expectations, Aligning Expectations and Assessing Understanding” by Susan Pusek, Director of Education and Training Programs for the UNC, Chapel Hill, NC TraCS program (September 20, 2017).
- Attended a Seminar on “Mystery Fish Killer in Delaware, USA” by Dr. Carmelo Tomas, Emeritus Professor from UNC-Wilmington (September 18th, 2017).
- As Convener, Outreach committee, I have planned/organized various educational/field trips, laboratory visits for MSc students.

Conference/Workshop/Seminar Organized

- [19th – 20th October 2023]: Training programme on “Aerosol sampling and Gravimetry Analysis” for JKPCO officials/Scientists. **Role: Convener.**
- [26th – 28th July, 2023]: National Symposium on Atmospheric Aerosol Measurements and Modelling over India: Past decade, Current status, and Challenges ahead in Munnar, Kerala **Role: Co-Convener.**
- [22nd – 23rd April, 2023]: PRAYOJAN 2023, INYAS Flagship Event (Post-PhD: Research, Academia and Industry Opportunities, Science Journalism, Grant Writing and Networking) **Role: Convener.**
- [20th March, 2023]: National Seminar on “Accelerating Change to solve the Water and Sanitation Crisis” to celebrate World Water Day under the banner of India’s G20 Presidency in 2023. Jointly organized by INYAS and GDC Paloura. **Role: Coordinator.**
- [20th – 25th February, 2023]: 6 days Winter School-2023 on “Hands on Training on Instrumentation and Analytical Techniques for Atmospheric Aerosol Measurements and Source Apportionment Studies” jointly organized by the Department of Environmental Sciences, Central University of Jammu and Indian National Young Academy of Sciences (INYAS). **Role: Convener.**
- [21st - 23rd September, 2022]: 3 days online Training on Disaster Risk Reduction jointly organized in Central University of Jammu in collaboration with National Institute of Disaster management, New Delhi.; **Role: Coordinator.**
- [15th - 16th September, 2022]: National Conference on Sustainable Environment: Water-Health-Agriculture-Climate Nexus in Central University of Jammu. **Role: Organizing Secretary.**
- [1st June, 2022]: National Workshop on "Air Pollution and Health Impacts [Need of Interdisciplinary Research]" in Central University of Jammu **Role: Convener.**
- [25th June, 2019]: International Workshop on "Role of Aerosols in Ice Nucleation: A climate perspective" in Central University of Jammu **Role: Convener.**

Networking, Public engagement and awareness

To work for clean air goals in the Himalayas and to meet objectives of the National Clean Air Programme (NCAP) in the Union Territory of Jammu & Kashmir, we have signed three Memorandum of Understanding (MoU) till date:

- I. **6th June, 2019:** Executed a tripartite MoU with Ministry of Environment Forest and Climate Change and Jammu & Kashmir Pollution Control Board.
- II. **5th February, 2020:** Executed MoU with Jammu & Kashmir Pollution Control Board to establish a dedicated aerosol instrumentation facility in CUJ Campus.

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III. **26th March, 2021**: Executed a tripartite MoU with Pollution control board and Municipal corporation to involve local bodies for seeking solutions to the problem of air pollution.

[21.03.2024]

[Shweta Yadav]