Bhola Ram Gurjar, PhD, FIE

Professor (HAG Scale)

Department of Civil Engineering, and Joint Faculty, Centre for Transportation Systems Indian Institute of Technology (I.I.T.) - Roorkee Roorkee # 247 667, Uttarakhand, INDIA



E-mail: bhola.gurjar@iitr.ac.in, brgurjar@gmail.com, Cellphone: +91 99271 41416 DoB: 15 June 1965; Gender: Male; Webpages: <u>BRG @ IITR</u>, <u>BRG @ Google Scholar</u>

Statement of research motivation

I enjoy in exploring, constructing and disseminating scientific knowledge with a view of its real-world application for accomplishing sustainable solutions to pressing environmental problems. My interdisciplinary educational training and cross-disciplinary work experience give me a leading edge to contribute effectively in multidisciplinary teams working on the environment, emissions, air quality, health risk, urban transport, energy, economy, and climate change related problems.

Methodological approach: I uphold an interdisciplinary and hybrid research approach to analyze external physical phenomena observed in nature with an understanding that human concepts of the environmental engineering and management, natural resources and man-made infrastructure, energy sources and economic structures, etc., are socio-technologically constructed entities that vary in time and space. I prefer to use a mixture of quantitative and qualitative tools in an integrated manner, and like to work with multi-disciplinary teams encompassing cross-functional areas of environmental engineering and sciences along with their socioeconomic and geopolitical implications.

Current research interests: Air / water quality assessment and management; Anthropogenic emissions and climate change; Health risk assessment; Environmental impact and risk analysis; Waste management; Energy and environmental policy evaluation; and Integrated cross-disciplinary studies of the environment, economy, technology, and infrastructure developments – particularly with the global change, sustainable development and risk governance perspectives.

Leadership Training

2020 (25 Feb.–07 Mar.): Attended **Leadership for Academicians Program (LEAP)**, organized by IIT Bombay; To prepare second tier academic heads likely to assume leadership roles in the future, LEAP is a three weeks flagship Leadership Development training program (2 weeks domestic and one-week foreign training) under the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT) Scheme of Govt. of India. The second part of this program will be held in University of Geneva, Switzerland, in due course of time.

| Education | |
|--|---|
| Postdoc (2002-2005): | Study of megacity emissions and their local-to-regional-to-global impacts Max Planck Institute for Chemistry, Mainz, Germany |
| Ph.D. (2000): | Environmental Risk Analysis for Industrial Siting, Planning & Management Indian Institute of Technology Delhi, India. |
| M.E. (1992): Honors (First Rank) | Civil (Environmental) Engineering MBM Engg. College, Jai Narain Vyas University, Jodhpur, India. |
| B.E. (1987): First Div. (In top slab) | Civil Engineering MBM Engg. College, Jai Narain Vyas University, Jodhpur, India. |

Work Experience

More than 31 years' progressive professional experience in industry, teaching, training, research, and consultancy.

1. 01 Jan. 2021 – continue: Professor (HAG Scale, Pay Level: 15, Basic Pay: Rs. 217600/-), Dept. of Civil Engg., IIT Roorkee

- 2. 16 June 2017 30 April 2021: Dean of Resources & Alumni Affairs, IIT Roorkee
- 3. 10 Feb. 2015 05 Feb. 2018: Head, Centre for Excellence in Transportation Systems, IIT Roorkee
- 4. 04 Apr. 2014 31 Dec. 2020: i) Professor (Pay Level: 14A, Last Basic Pay: Rs. 201600/-), Environmental Engineering Group, Department of Civil Engineering, Indian Institute of Technology Roorkee; ii) Associated Faculty, Centre for Transportation Systems, IIT Roorkee (2006-present), and iii) Associated Faculty, Centre of Excellence in Disaster Mitigation and Management, IIT Roorkee (2008-2017). Teaching, researching and consulting in the interdisciplinary area of air / water pollution, risk assessment and urban climate change.
- 5. 07 Dec. 2009 03 Apr. 2014 (4 Years 4 Months): i) Associate Professor (PB4, Grade Pay: Rs. 9500, Last Basic Pay: Rs. 58,880/-, Pay Band Basic: Rs. 49380/-), Environmental Engineering Group, Department of Civil Engineering, Indian Institute of Technology Roorkee. Taught UG/PG courses, conducted research on air pollution, health risk in megacities and urban heat island studies, consultancy on EIA and environmental management.
- 6. 21 Mar. 2005 06 Dec. 2009 (4 Years 8.5 Months): Assistant Professor (PB4, Grade Pay: Rs. 9000/-, Last Basic Pay: Rs. 47800/-, Pay Band Basic: Rs. 38800/-), Environmental Engineering Group, Department of Civil Engineering, Indian Institute of Technology Roorkee. Taught UG/PG courses, conducted research on air and water pollution, and provided consultancy related to environmental impact assessment.
- 21 Jan. 2002 10 Mar. 2005 (3 Years 1.5 Months): Research Scientist, Atmospheric Chemistry Division, Max Planck Institute for Chemistry, Mainz, Germany. Conducted research on megacity emissions and their local-to-regional-to-global impacts on air quality and climate.
- 8. 08 Apr. 1996 18 Jan. 2002 (5 Years 9 Months): Lecturer, National Institute of Technical Teachers Training and Research, Chandigarh, India. Coordinated and conducted postgraduate level short-term courses for technical teachers and industry personnel. Taught postgraduate courses, conducted training and research, and provided consultancy services related to entrepreneurship development and environmental management.
- 9. 12 Feb. 1996 05 Apr. 1996 (1.5 Months): Lecturer, North Eastern Regional Institute of Science & Technology, Nirjuli, India. Taught undergraduate students of civil engineering department.
- 10. 01 Aug. 1992 09 Feb.1996 (3 Years 6 Months): Junior/Senior Research Fellow, Indian Institute of Technology Delhi, India. Conducted research on environmental risk analysis for industrial siting, planning and management with an emphasis on dispersion of airborne accidentally released toxic chemicals from industrial facilities and health risk assessment.
- 11. 27 Jan. 1991 13 Apr. 1991 (2.5 Months): Lecturer (Contractual), Civil Engineering Dept., Jai Narain Vyas University (Formerly University of Jodhpur), Jodhpur, Rajasthan, India. Taught undergraduate students of civil engineering department.
- 12. 16 Mar. 1988 31 Aug.1990 (2 Years 5.5 Months): Site/Civil Engineer, in consulting and construction companies. Supervised construction activities, provided consultation on estimation and costing and geo-environmental testing.

International Collaborations

- 1. Max Planck Institute for Chemistry, Mainz, Germany
- 2. UK Centre for Ecology & Hydrology (CEH), Bush Estate, EH26 0QB, UK
- 3. Faculty of Engineering, Univ. of Mauritius, Mauritius
- 4. Molina Centre for Energy and the Environment, La Jolla, CA 92037, USA
- 5. University of Surrey, Guildford, UK
- 6. National Institute for Environmental Studies (NIES), Tsukuba, Japan
- 7. The Federal University of Technology Paraná, Brazil
- 8. Universidad Nacional Autonoma de Mexico, Mexico City, Mexico
- 9. United Nations University, Institute of Advanced Studies, Yokohama, Japan
- 10. MIT, Cambridge, and Molina Center for Energy and the Environment, California, USA
- 11. Karlsruhe Institute of Technology (KIT), Garmisch-Partenkirchen, Germany
- 12. Meisei University, Tokyo, Japan
- 13. Alexandru Ioan Cuza University, Iasi, Romania
- 14. ETH Zurich, Switzerland

Academic, Research or Training Visits to Foreign Countries

- 1. May 19 June 30, 2014: Visiting Professor, The Federal Univ. of Technology Paraná, Brazil.
- 2. June 15 July 07, 2013: Visiting Scientist, National Inst. for Environ. Studies, Tsukuba, Japan.
- 3. Dec. 21, 2012 Jan. 09, 2013, UKIERI Fellow, University of Surrey, Guildford, UK.
- 4. December 15-27, 2010: Visiting Scientist, National Inst. for Environ. Studies, Tsukuba, Japan.
- 5. June 06 July 05, 2010: Visiting Professor, The Cyprus Institute, Nicosia, Cyprus.
- 6. Feb. 27 to March 07, 2010: Visiting Scientist, National Inst. for Environ. Studies, Tsukuba, Japan.
- 7. Sept. 3 Oct. 5, 2007: Advanced International Training Programme on Air Pollution Management; sponsored by Sida and organized by Swedish Meteorological and Hydrological Institute (SMHI), Norrköping, Sweden.
- 8. May 14, 2007: Hands-on training on National Mobile Inventory Model (May 14, 2007). Organized by Emission Inventory and Analysis Group, United States Environmental Protection Agency (USEPA), Research Triangle Park, NC 27711, USA.
- 9. Aug. 21-30, 2006: AsiaFlux Training Course on Micrometeorology -Theory and Practice of CO₂ Flux Measurement. Organized by AsiaFlux Secretariat, Centre for Global Environmental Studies, Tsukuba, Japan.

Administrative, Managerial and Leadership Roles

- 1. Dean of Resources & Alumni Affairs, IIT Roorkee (June 2017-April 2021)
- 2. Head, Centre of Excellence for Transportation Systems (CTRANS), IITR (Feb 2015-Feb 2018)
- 3. Joint Secretary, International Society for Energy, Environment and Sustainability (2017-18)
- 4. Convener, Department Media Committee, Civil Engg. Dept., IITR (2020-22)
- 5. Convener, Dev., Planning & Overseas Issues Committee, CED, IITR (Aug. 2014-July 2016)
- 6. Chairman, Centre's Research Committee, CTRANS, IIT Roorkee (2014-2015)
- 7. Chairman, The Institution of Engineers (India) Roorkee Local Centre, Roorkee (2012-2014)
- 8. Coordinator, Environmental Engg. Lab., Dept. of Civil Engineering, IIT Roorkee (2012-14)
- 9. Faculty Advisor, Literary Section (Magazines), Cultural Council, IIT Roorkee. (2009-2014)
- 10. Hon. Secretary, The Institution of Engineers (India) Roorkee Local Centre, Roorkee (2010-2012)
- 11. Officer-In-Charge, M.Tech. (Env. Engg.) Programme, Civil Engg Dept, IIT Roorkee (2010-12)
- 12. Additional Officer-In-Charge, Environ. Engg. Lab., Civil Engg. Dept., IIT Roorkee (2005-07)
- 13. Officer-In-Charge, UG Practical Training, Civil Engg. Dept., IIT Roorkee (2006-2008)
- 14. House Secretary, Vindhyachal House, Indian Institute of Technology Delhi, New Delhi (1995-96)
- 15. Cultural Secretary, Vindhyachal House, IIT Delhi, New Delhi (1994-95)
- 16. Editor, Board for Student Publications, IIT Delhi, New Delhi (1992-93)
- 17. Cultural Secretary, M.B.M. Engineering College, Jai Narain Vyas University, Jodhpur (1986-87)

Honors, Awards and Distinctions

- 2019 ESDA Environmental Excellence Award, during International Conference (ESDACON 2019) held on 'Global Environmental Challenges, Human Health and Sustainable Development' at the Convention Centre, Jawaharlal Nehru University, New Delhi. Organized by Environment and Social Development Association (ESDA)' Delhi in foreign partnership with Metropolitan University, San Juan, PR, USA and in collaboration with CSIR-NEERI, Dr. Bhim Rao Ambedkar College of Delhi University, CSRD, JNU, New Delhi, Amity University Noida, Rajiv Gandhi Super Speciality Hospital Delhi, ECPFO Delhi and GSI Delhi.
- 2. 2018 Best Theoretical-Oriented Paper Award, Journal of Water Resources Planning and Management, Environmental and Water Resources Institute, USA
- 3. 2015 Eminent Environmental Engineer Award, conferred by the Environmental Division Board of the Institution of Engineers (India) during 31st National Convention of Environmental Engineers held on 6th November, 2015 in Chandigarh.
- 4. **2014 Eminent Engineers Award**, by the Uttarakhand State Centre (Dehradun) of The Institution of Engineers (India) in recognition of his significant contribution in the academics and research areas related to air pollution emissions, air quality and health risk assessment. The award was conferred by the Hon. Chief Minister of Uttarakhand on 3rd February 2016 in a function organized at Bijapur Guest House, Dehradun.
- 5. 2014 ASCE State of the Art of Civil Engineering Award for "Climate Change Modeling, Mitigation, and Adaptation," published by EWRI in 2013". Honors & Awards Program Office, American Society of Civil Engineers, 1801 Alexander Bell Drive, Reston, USA.

- 6. **2012** UK-India Education and Research Initiative (UKIERI) Fellow grant award, from the British Council Division of British High Commission, New Delhi (Univ. of Surrey, UK, Dec. 2012-Jan. 2013).
- 7. National Design Award in Environmental Engineering 2011. National Design and Research Forum (NDRF), The Institution of Engineers (India).
- 8. Highly Cited Author (2010-11); Elsevier's journal Atmos. Environment (Imp. Factor = 3.465).
- 9. Highly Cited Author (2007-10); Elsevier's journal Atmos. Environment (Imp. Factor = 3.139).
- 10. 2004 START Young Scientist Award, an International award from the Scientific Steering Committee of the global change SysTem for Analysis, Research and Training (START), Washington, D.C., U.S.A. <<u>http://www.start.org/</u>> in recognition of the outstanding contributions made to global change science.
- 11. Advanced Research Support, Max Planck Society, Germany (2002-05)
- 12. Ford Foundation International Fellow-Elect (2001-2002).
- 13. The Nawab Zain Yar Jung Bahadur Memorial Medal (1995-96). A National level award from The Institution of Engineers (India) for the best paper published in the Environmental Engineering Division.
- 14. First Rank in J.N.V. University Jodhpur, M.E. Civil (Environmental) 1992 (77.53 % Marks).
- 15. Qualified CSIR-UGC Test for JRF & Eligibility for Lectureship in Engineering Sciences; 30.06.1991.
- 16. Two times represented J.N.V. University in National level debate contests (1986-87).
- 17. First Prize in Inter-college poetry contests at National (1986) and State (1993) levels.
- 18. Best Scholar, Chopasni Higher Secondary School, Jodhpur (1981-82).
- 19. First Rank in School and 26th Rank in Rajasthan State (India), Higher Secondary Examination 1982 (84.3 % Marks) with distinctions in Physics (88%), Chemistry (95%), and Mathematics (95%).
- 20. First Rank in School and 22nd Rank in Rajasthan State (India), Secondary School Examination 1981 (86.4 % Marks) with distinctions in Physics (89%), Chemistry (88%), and Mathematics (98%).
- 21. Outstanding Performance Medal, awarded by the Board of Secondary Education, Rajasthan (India) for making extra ordinary performance in extra-curricular activities (poetry), 1980-81.
- 22. First Rank in District Sawai Madhopur, Rajasthan State (India), Village Talent Search Exam. 1979.

International and National Outreach

- 1. **Member**, Higher Education, Skill Development and related Services (SSD-I-4), a Technical Committee of Bureau of Indian Standards (July 2021-Contd.).
- 2. Nodal Officer, National Clean Air Program (NCAP), IITR & UKEPPCB Dehradun (2019-Contd.).
- 3. Member, Building and Works Committee, NIT Uttarakhand (2018-Contd.).
- 4. Member, IIT Ropar Task Force Committee for initiating new academic programs (2015-2017).
- 5. Member, Board of Studies in Env. Sc. & Tech., MRSTU, Bathinda, Punjab (2016-Contd.).
- 6. **Expert Member**, NSM Group of C-DAC Pune under "National Supercomputing Mission (NSM): Building Capacity and Capability"; jointly managed by the Department of Science & Technology (DST) and the Department of Electronics & Information Technology (DeitY), Govt. of India (2016-2017).
- 7. Mentor, Prakriti, Techfest-2014, IIT Bombay.
- 8. **Expert Reviewer**, Climate Risk chapter of the International Panel on Climate Change in Cities' (IPC3's) First Assessment Report [A complementary activity to the Intergovernmental Panel on Climate Change (IPCC), the IPC3 is an initiative of the Urban Climate Change Research Network (UCCRN) and supported by the World Bank's Global Facility for Disaster Reduction and Recovery (GFDRR), the U.S. Geological Survey (USGS), the City University of New York Institute for Sustainable Cities (CISC), Columbia University's Center for Energy, Marine Transportation and Public Policy (CEMTPP), the Columbia Center for Climate Systems Research (CCSR), and the NASA Goddard Institute for Space Studies].
- 9. External reviewer, The Asia-Pacific Network for Global Change Research (APN).
- 10. **Peer-Reviewer**, Journal of Environment and Development, Atmospheric Environment, Environmental Science & Technology, Science of the Total Environment, Environmental Monitoring and Assessment, International Journal of Environment and Waste Management, Journal of The Institution of Engineers (India) Environmental Engg. Div.
- 11. International Representative Committee Member, International Association for Urban Climate (IAUC), Columbus, USA.
- 12. Fellow / Member, Population Environment Research Network (PERN), USA; Indo-German Forum on International Environmental Governance, Potsdam, Germany; Indian Association for Environmental Management, Nagpur, India; The Institution of Engineers (India), Kolkata, India; Institution of Water and

Environment (India); International Association of Hydrological Sciences, Oxfordshire, UK; Indian Science Congress Association, Kolkata, India; Indian Society for Technical Education, New Delhi, India.

Editorial Positions

- 1. Associate Editor, American Society for Civil Engineers' Journal of Hazardous, Toxic and Radioactive Waste (ASCE-JHTRW), USA (2012-Continue).
- 2. Associate Editor, GSTF Journal of Engineering Technology (JET) (2014-2016).
- 3. Associate Editor, Journal of Energy and Environmental Sustainability (JEES); an official publication of the International Society for Energy, Environment and Sustainability (ISEES), IIT Kanpur, India (2014-Continue).
- 4. Editor, Indian Journal of Air Pollution Control; An official journal of Indian Association for Air Pollution Control, New Delhi, India (2014-2016).
- 5. Editorial Board Member, ISRN Atmospheric Sciences, Hindawi Publishing Corp. (2012-2014).
- 6. Editor, American Journal of Environmental Protection (2012-2016).
- 7. Editorial Board Member, Journal of Earth, Ocean and Atmospheric Sciences, Columbia International Publishing, USA (2014-2016).
- 8. Editorial Board Member, International Journal of Wastewater Treatment and Green Chemistry (IJWTGC), Serials Publications, India (2014-2016).

Fellowships and Scholarships

- 1. UKIERI Fellowship, University of Surrey, Guildford, UK (2012)
- 2. Advanced Postdoctoral Research Fellowship, Max Planck Society, Germany (2002-05)
- 3. Senior Research Fellowship, Council of Sci. & Ind. Res. (CSIR), Govt. of India (1994-96)
- 4. Junior Research Fellowship, Council of Sci. & Ind. Res. (CSIR), Govt. of India (1992-94)
- 5. National Merit Scholarship, Government of India (1982-87)
- 6. Village Talent Scholarship, Government of Rajasthan, India (1979-82)

Major R & D Projects and Consulting Assignments (> Rs. 1165.00 Lakh)

Major R & D Projects Undertaken as Principal Investigator (> Rs. 382.00 Lakh)

- 1. Megacity Delhi atmospheric emission quantification, assessment and impacts (DelhiFlux). An Indo-UK Project (2017-2021). **Rs. 287.60 Lakh.**
- 2. Study of the urban transport system of megacity Delhi with co-benefits approach. Sponsored by the United Nations University, Tokyo, Japan (2011-2014). **Rs. 18.60 Lakh.**
- Implementation and Validation of Numerical Models for Heat Island Studies in Megacity Delhi. Sponsored by the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT) (2008-2013). Rs. 16.00 Lakh.
- 4. Megacities and global change: An integrated study of South Asian megacity emissions and their local-toregional-to-global impacts on air quality and climate. Indo-German collaborative research project sponsored by the Max Planck Society, Germany, as a Max Planck Partner Group of the Max Planck Institute for Chemistry, Mainz (Germany) at IIT Roorkee (2006-2011). Euro 100K (~ **Rs. 60.00 Lakh**).

Major R & D Projects Undertaken as Co-Principal Investigator (> Rs. 59.00 Lakh)

- 1. Structural characterization of dye-decolorizing peroxidase enzyme. DBT, GoI. Rs. 39.00 Lakh.
- Evaluation of Riverbank Filtration (RBF) performance under extreme environmental conditions. An international collaborative research project co-sponsored by NWRI, USA, and IIT Roorkee, India (2006-2009). (US\$ 50,000/-, ~ Rs. 20.00 Lakh).

Major R & D Project Collaborations

1. MEGAPOLI: <u>Megacities: Emissions</u>, urban, regional and <u>Global Atmospheric POLl</u>ution and climate effects, and integrated tools for assessment and mitigation; THEME FP7-ENV-2007.1.1.2.1: Megacities and regional hot-spots air quality and climate. Collaborative Project (medium-scale focused research project), Grant agreement no.: 212520 (Total cost: Euro 5.1 Million, EU contribution: ~Euro 3.4 Million). [participated as MEGAPOLI (non-funded by EC) non-European international scientific Collaborator/Co-P.I.] URL: <u>http://megapoli.dmi.dk/maininfo/colbrs.html</u>

2. Multiscale Investigations of the Two-way Interactions between Climate and Aerosol with Radiative Feedbacks (MSITICA). Collaborative project of total budget Rs. 1037.10 lakhs; submitted to the Ministry of Earth Sciences (MoES), Govt. of India, New Delhi, by a consortium of eight institutes including IIT Kanpur, TERI, New Delhi, NEERI, Nagpur, IIT Roorkee, IIT Khargpur, IIT Guwahati, ARAI, Pune & CDAC Pune.

Major Consulting Assignments Undertaken as Principal Investigator (> Rs. 456.00 Lakh)

- 1. Measurement of Green House Gas (GHG) Emission from Reservoir of Chamera-I Power Station (HP). NHPC Ltd. (2020-21). **Rs. 60.40 Lakh.**
- 2. Consultancy Services for Replication of Eco-friendly River Environment Training Techniques for Sustainable Fairway Development in the Ganga River (NW- 1). IWAI, New Delhi (2019-21). Rs. 236.00 Lakh.
- 3. Eco-Friendly Flood Management / Waterway Protection of Embankment with Reason of Breach of Kamla-Balan River Embankment. Water Resources Department, Govt. of Bihar (2019-20). **Rs. 100.30 Lakh.**
- 4. Soil Contamination Testing in Laboratory for Chromium (V1) and Remedial Suggestions, If Necessary. M/S Sustainable Solutions for Environment, Mumbai (2018). **Rs. 3.54 Lakh.**
- 5. Study of Alternative Approaches for the Mitigation of High Sulfate/High TDS Wastewater in the Plant of Insilco Ltd., Gajraula, U.P. M/S Insilco Ltd., Gajraula, U.P. (2017-18). **Rs. 33.63 Lakh.**
- 6. Preparation of Irrigation Plan to Use the Treated Effluent Discharge. M/S Ramaa Shyama Papers Pvt. Ltd., Bareilly, U.P. (2017). **Rs. 1.61 Lakh.**
- 7. Preparation of Environmental Compensation Report for the Past Pollution Caused by a Pulp and Paper Mill. Central Pollution Control Board, New Delhi (2016). **Rs. 3.31 Lakh.**
- 8. Validation of design for Air & Water Pollution Control equipment for 8 TPH Bio waste Boiler. M/s ITC Ltd., Sardar Patel Marg, Saharanpur, India (2014). **Rs. 2.47 Lakh.**
- 9. Vetting of feasibility report of air pollution control system. M/s Gold Plus Glass Industry Ltd., Thithola, Landhora, Roorkee, India (2014). **Rs. 1.96 Lakh.**
- 10. Study of Environmental Issues of Irrigation and Drainage network of a Dam Canal System in Bundelkhand region of Uttar Pradesh (UP). Tahal Consulting Engineers Ltd., New Delhi, India (2012). **Rs. 1.54 Lakh.**
- 11. Environmental Impact Assessment and Environmental Management Plan for a Common Solid Waste treatment, storage & disposal facility (CSWMF) in Sector-5, SIDCUL-Haridwar, Uttarakhand. Funded by Bharat Oil and Waste Management Limited (BOWML), New Delhi, India (2010-11). **Rs. 4.91 Lakh.**
- 12. Environmental Impact Assessment of a proposed Common Hazardous Waste Management Facility (CHWMF) at Mauza Mukimpur, Roorkee, Uttarakhand. Funded by Bharat Oil and Waste Management Limited (BOWML), New Delhi, India (2007-08). **Rs. 3.75 Lakh.**
- 13. Environmental Impact Assessment of Doon Cyber Towers at IT Park in Dehradun. Funded by SIDCUL IDEB Project Co. Pvt. Ltd., Dehradun. (2007). **Rs. 3.20 Lakh.**

Major Consulting Assignments Undertaken as Co-Principal Investigator (> Rs. 268.00 Lakh)

- 1. Uttarakhand Disaster Recovery Project Vetting of technical reports, data analysis reports, survey finding reports for Risk assessment studies, Uttarakhand Disaster Recovery Project. Uttarakhand Government (2016-19). **Rs. 160.00 Lakh.**
- 2. Municipality Sludge Volume Reduction System. SSP Pvt. Ltd., Faridabad, Haryana (2019). Rs. 7.15 Lakh.
- 3. Cumulative scientific study to assess the impact of existing and proposed HP stations on Saryu river basin in the Distt. of Bageshwar. Funded by GM (Civil- UJVNL, Dehradun (2012-15). **Rs. 48.50 Lakh.**
- 4. Vetting of Design of 15 MLD and 20+7.5 MLD Water Treatment Plants (WTPs), Dehradun. Funded by O.P. Gupta and Contractors, Agra, (U.P.) (2014). **Rs. 8.42 Lakh.**
- 5. Effect of Fine Bubble Aeration in Jamuna Jheel: Water Quality Studies. Lucknow Development Authority, Lucknow (U.P.) (2011-12). **Rs. 10.00 Lakh.**
- 6. Upgradation of Existing UASB based Sewage Treatment Plants (STPs) in NOIDA. Funded by Chief-Maintenance Engr. (Jal), NOIDA Development Authority, Noida (U.P.) (2010-11). **Rs. 15.00 Lakh.**
- 7. Scrutiny of PMGSY Road DPRs for Phase VII of Uttar Pradesh. Funded by National Rural Road Development Agency, Govt. of India, New Delhi (2009-10). **Rs. 7.10 Lakh.**
- 8. Muck Disposal and Management Plan for 330 MW Shrinagar Hydro Electric Power Project in Uttaranchal (India). Funded by Alaknanda Hydro-Power Co. Ltd., Shrinagar, Uttaranchal (2008). **Rs. 5.00 Lakh.**
- 9. Environmental Impact Assessment of Sara Industrial Estate Ltd. Dehradun. Funded by Sara Industrial Estate Ltd. Dehradun (Uttarakhand) (2007). **Rs. 2.24 Lakh.**

- 10. Environmental Impact Assessment of Dev Bhoomi Industrial Estate. Funded by the Datt Infrastructure & Services Ltd., Dehradun (2005-2006). **Rs. 1.65 Lakh.**
- 11. Tracer Study for polytechnic pass-outs (a part of the World Bank assisted project on Strengthening Technician Education in India), NITTTR Chandigarh (2000). **Rs. 3.50 Lakh.**

Research Guidance

PhD Thesis (awarded): 13

- 1. Jat, R. Regional Air Quality Modeling in India Using Chemical Transport Model. Ph.D. thesis Roorkee: Civil Engineering Dept., I.I.T. Roorkee, India, 2021.
- 2. Sahu, V. Indoor Air Quality Monitoring & Modeling with respect to Particulate Pollution. Ph.D. thesis Roorkee: Civil Engineering Dept., I.I.T. Roorkee, India, 2021.
- 3. Jayaswal, K. Studies on UASB-DHS reactor for the treatment of municipal wastewater. Ph.D. thesis Roorkee: Civil Engineering Dept., I.I.T. Roorkee, India, 2021. (Jointly with Prof. H. Harada, Tohoku Univ., Japan).
- 4. Mudhoo, A. Accounting of Greenhouse Gas Emissions for Different Treatments of Organic Wastes. Dept. of Chemical & Environmental Engineering, Faculty of Engineering, Univ. of Mauritius, Mauritius, 2019. (Jointly with Prof. R. Mohee, Univ. of Mauritius).
- 5. Katiyar, Richa. Enhancing the Production of Biodiesel from Microalgae for Environment Friendly Transportation. Ph.D. thesis Roorkee: Centre for Transportation Systems, I.I.T. Roorkee, India, 2017.
- 6. Mahapatra, P.S. Regional air quality assessment in changing climate scenarios: A case study of Bhubaneswar. Dept. of Environment & Sustainability, CSIR IMMT, Bhubaneswar, India, 2017. (Jointly with Dr. T. Das, CSIR-IMMT)
- 7. Chandrrasekar. Ambient Air Quality Modeling Using Soft Computing Techniques. Ph.D. thesis Roorkee: Civil Engineering Dept., I.I.T. Roorkee, India, 2016. (Jointly with Prof. C.S.P. Ojha, IIT Roorkee, India).
- 8. Walvekar, P. Stack Emission and Health Risk Integrated Modeling of a Coal Power Plant. Ph.D. thesis Roorkee: Civil Engineering Department, I.I.T. Roorkee, India, 2014, p.169.
- 9. Sharma, R.K., Risk Assessment of a Petroleum Oil Storage Terminal. Ph.D. thesis Roorkee: Centre of Excellence in Disaster Mitigation and Management, I.I.T. Roorkee, India, 2014, p. 179 (Jointly with Dr. R. Agrawal, IIT Roorkee, and Dr. S.R. Wate, NEERI, India).
- 10. Gosu, Vijayalakshmi. Removal of Nitrogenous Heterocyclic Compounds by Nanoscale Zerovalent Iron. Ph.D. thesis Roorkee: Civil Engineering Department, I.I.T. Roorkee, India, 2014, p.193.
- 11. Kumar, P. Structural Studies on 11S Globulin and 2S Albumin from Wrightia Tinctoria. Ph.D. thesis Roorkee: Dept. of Biotechnology, IIT Roorkee, India, 2014 (Jointly with Dr. P. Kumar, IIT Roorkee, India).
- 12. Nagpure, Ajay S., Modeling of Urban Traffic Emissions. Ph.D. thesis Roorkee: Dept. of Paper Technology, IIT Roorkee, India, 2011, p.375 (Jointly with Dr. V. Kumar, IIT Roorkee, India).
- 13. Thakur, A.K. Study of Water Quality in River Bank Filtration. Ph.D. thesis Roorkee: Civil Engineering Department, I.I.T. Roorkee, India, 2007, p. 227 (jointly with Prof. C.S.P. Ojha, IIT Roorkee, India, and Prof. Thomas Grishek, Univ. of Applied Sciences, Dresden, Germany).

PhD Thesis (in progress): 07

- 14. Yadav, Shailendra Formation, Growth and Quantification of Ultrafine Particles in Selected Microenvironments of Megacity Delhi. In progress Ph.D. thesis Roorkee: Dept. of Environmental Engineering, DTU, India. (Jointly with Prof R. Mishra).
- 15. Aromal, T. Development of Level of Service for Airport Passenger Terminal Buildings. In progress Ph.D. thesis Roorkee: Centre for Transportation Systems, I.I.T. Roorkee, India (Jointly with Prof. E. Rajasekar).
- 16. Pant, Neha. Artificial Intelligence Techniques for Environmental Predictions. In progress Ph.D. thesis Roorkee: Dept. of Computer Science & Engg., I.I.T. Roorkee, India. (Jointly with Prof. Durga Toshniwal).
- 17. Nayak, Akshay Environmental Sustainability Assessment of Inland Water Transport Infrastructure in India. In progress Ph.D. thesis – Roorkee: Centre for Transportation Systems, I.I.T. Roorkee, India (Jointly with Prof. N. Sharma).
- 18. Swarnkar, Anurag. Development of GIS-Based Emission Inventory for Transport Sector. In progress Ph.D. thesis Roorkee: Centre for Transportation Systems, I.I.T. Roorkee, India.
- 19. Kumar, Gaurav. Impacts of air pollution on historical buildings. In progress Ph.D. thesis Roorkee: Civil Engineering Dept., I.I.T. Roorkee, India.

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- 4. Yadav, M. Study of Arsenic using Substance Flow Analysis. M.Tech. thesis: Department of Civil Engineering, IIT Roorkee, India, 2017-18.
- 5. Tyagi, M. Health risk due to air pollution in state capitals of India. M.Tech. thesis: Department of Civil Engineering, IIT Roorkee, India, 2016-17.
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- 7. Singh, S. GHG emissions from various waste management practices in megacity Delhi. M.Tech. thesis: Department of Civil Engineering, IIT Roorkee, India, 2016-17.
- 8. Singh, D. Study on environmental co-benefits in transport sector of megacity Delhi. M.Tech. thesis: Centre for Transportation Systems, IIT Roorkee, India, 2016-17.
- 9. Verma, Anoop K., Urban air quality and health risk assessment. M.Tech. thesis: Department of Civil Engineering, IIT Roorkee, India, 2015-16.
- 10. Kumar, Ajeet, Indoor air quality monitoring with respect to fine particulate matter. M.Tech. thesis: Department of Civil Engineering, IIT Roorkee, India, 2015-16.
- 11. Jha, Shilpi. Low carbon mobility plan for Viajayawada. M.Tech. thesis: Centre for Transportation Systems, IIT Roorkee, India, 2014-15. (Jointly with Prof. M. Parida)
- 12. Rathod Harshadkumar Karashanbhai. Isolation of algal species from water bodies using various stress conditions. MTech thesis: Dept. of Civil Engg., IITR, India, 2014-15. (Jointly with Dr Raja Choudhury)
- 13. Gupta, Mohit. Wastewater treatment using membrane bioreactor. M.Tech. thesis: Department of Civil Engineering, IIT Roorkee, India, 2014-15. (Jointly with Dr Pramod Kumar)
- 14. Gunjuruli, Anvesh. Assessment of Greenhouse gas emissions from storage-based hydropower scheme. M.Tech. thesis: Department of Civil Engineering, IIT Roorkee, India, 2014. (Jointly with Dr M L Kansal)
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- 19. Patel, D. Post treatment of UASB effluent by extended aeration. Department of Civil Engineering, IIT Roorkee, India, 2012. (Jointly with Dr AA Kazmi)
- 20. Bhargava, N. Assessment of GHG mitigation and CDM potential in urban transport sector of Chandigarh. M.Tech. thesis: Department of Civil Engineering, IIT Roorkee, India, 2011. (Jointly with Dr Suman Mor)
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- 29. Mohan, K.Y. Air quality and health risk assessment of stack emissions from thermal power plant: M.Tech. thesis: Civil Engineering Dept., I.I.T. Roorkee, India, 2006 (with Dr. Pramod Kumar, IIT Roorkee, India).
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- 4. Gupta, Mohit. Modeling of enhanced biological phosphorous removal. Department of Civil Engineering, IIT Roorkee, India, 2014. (Jointly with Dr Pramod Kumar)
- 5. Gunjuluri Anvesh. Calculation of Greenhouse Gas Emissions from Reservoir: Carbon Foot Print of a Reservoir. Dept. of Civil Engg., IIT Roorkee, India, 2013. (Jointly with M. L. Kansal)
- 6. Kumar, A. Review of Composting Process. Civil Engineering Department, I.I.T. Roorkee, India, 2012. (With Dr. Pramod Kumar)
- 7. Varshney, R. Growth of Flocs in Activated Sludge. Civil Engineering Department, I.I.T. Roorkee, India, 2012. (Jointly with Dr. Pramod Kumar)
- 8. Divyesh Patel (2011). Post Treatment of UASB Effluent by Activated Sludge Process. Civil Engineering Department, I.I.T. Roorkee, India, 2012. (Jointly with Dr. A.A. Kazmi)
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- 17. Rayudu, P.P. Trends in oil and gas consumption and atmospheric emissions. Department of Civil Engineering, IIT Roorkee, India, 2005.
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- 3. Yadav, S.K. Integrated waste management. Civil Engg. Dept., IITR, 2011. (Jointly with Dr MK Chandel).
- 4. Patel, D. Scenario of Pollution Load in Himachal Pradesh State. Department of Civil Engineering, IIT Roorkee, India, 2011. (Jointly with Dr A.A. Kazmi).
- 5. Manjul, M. Emission inventory for industrial sector. Dept. of Civil Engg., IIT Roorkee, 2010.

- 6. Bhargava, N. Study of start-up vehicular exhaust emissions using AVL Di Gas 444 Apparatus. Department of Civil Engineering, IIT Roorkee, India, 2010.
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- 8. Kumar, R. Determination of molecular signature of urban PAHs. Department of Civil Engineering, IIT Roorkee, India, 2009.
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- 1. Shashank V. Jain, Lakshay Choudhary, Hulsurkar Anirudha (2014). Challenges and Opportunities for Cleaning Ganga: Engineering Approach. Civil Engineering Department, I.I.T. Roorkee, India.
- 2. Ankit Jain, Rashesh Gupta, Sachin, Sahil Singhal, Shantanu Agarwal (2014). Trans-boundary Infrastructure Footprint (TBIF) based GHG Accounting for Indian Cities. Civil Engineering Dept., IIT Roorkee, India.
- 3. Neeraj Waiker, Vaibhav Jatav (2011). Study of hazardous waste management plant, Laksar. Civil Engineering Department, I.I.T. Roorkee, India.
- 4. Shashank Shekhar, Prashant & Shubham (2011). Study of Urban Transport Emission with Co-Benefit Approach in Delhi. Civil Engineering Department, I.I.T. Roorkee, India.
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- 6. Gupta, S. and Group (2009-10). EIA of Expressways. Civil Engineering Department, I.I.T. Roorkee, India. (Jointly with Dr. M. Parida).
- 7. Sharma, A. and group (2008-09). EIA of Public Transport System in Delhi. Civil Engineering Department, I.I.T. Roorkee, India. (Jointly with Dr. M. Parida).
- 8. Singh, H. and group (2008-09). GIS based Modeling to Estimate Urban Carbon Footprints in Delhi. Civil Engineering Department, I.I.T. Roorkee, India. (Jointly with Dr. R.D. Garg).
- 9. Purohit, A. and group (2007-08). Development of Emission Inventory for the City of Mumbai. Civil Engineering Department, I.I.T. Roorkee, India. (Jointly with Dr. M. Parida).
- 10. Kumar, A.U. and group (2006-07). Impact of Urban Transport Development on Air Quality in Dehradun. Civil Engineering Department, I.I.T. Roorkee, India. (Jointly with Dr. M. Parida).

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- 1. Basu, D., 2008. Urban heat island effect in urban areas.
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- 3. Sharma, Ketki, 2006. Construction of Emission Inventory for Transport Sector of Megacity Delhi.
- 4. Reddy, K. R. Prasad, 2006. Estimates of Traffic Emissions (2001-2005) for Megacity Mumbai.

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List of Publications/Presentations

[Total 214: Books (12); Book-chapters (32); Papers in peer-reviewed journals (91); Papers and presentations in peer-reviewed conferences (47); Feature articles (7); Edited conference/workshop/seminar proceedings (3); Book-reviews (3); Thesis/dissertation, academic reports (6); Technical reports, monographs/manuals (13)].

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 Gezerman, Ahmet Ozan, Corbacioglu, Burcu Didem, Gurjar, Bhola R. (Eds.), 2018. Effective Solutions to Pollution Mitigation for Public Welfare. IGI Global. DOI: <u>https://doi.org/10.4018/978-1-5225-3379-5</u>. ISBN13: 9781522533795 | ISBN10: 1522533796 | EISBN13: 9781522533801

- Gurjar, B. R., Vinay K. Tyagi, 2017. Sludge Management. CRC Press (Taylor & Francis Group), ISBN 9781138029545. URL: <u>https://www.crcpress.com/Sludge-Management/Gurjar-Tyagi/p/book/9781138029545</u>
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- Agarwal, A.K., Agarwal, R.A., Gupta, T., Gurjar, B.R. (Eds.), 2017. Biofuels: Technology, Challenges and Prospects. Springer. DOI: 10.1007/978-981-10-3791-7. ISBN: 978-981-10-3791-7. ISSN: 1865-3529. URL: <u>https://www.springer.com/gp/book/9789811037900</u>
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- 12. Sharma, D. D., S. K. Dhameja, **B. R. Gurjar** (eds.), 1999. Entrepreneurship, Strategic Management & Globalization. Rawat Publications, Jaipur, India, 285p. ISBN 81-7033-500-6.

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- 4. Sahu, V., Kumar, A., & Gurjar, B. R., 2017. Physicochemical Characterization of Indoor Airborne Dust & Indoor Air Quality Investigation of Different Hostel Rooms. Second Indian International Conference on Air Quality Management, June 1-2, 2017, IIT Delhi, India (Oral Presentation).
- Jayaswal, K., Nomoto, N., Sahu V., Gurjar, B. R., Kazmi, A. A. and Harada, H., 2017. Performance Evaluation of a Practical Scale Down-Flow Hanging Spong Process for Treatment of Municipal Sewage. First ISEES International Conference on Sustainable Energy and Environmental Challenges, February 26-28, 2017, Centre of Innovative and Applied Bioprocessing, Mohali, India. (Poster Presentation).
- Jayaswal, K., Nomoto, N., Singh, R.P., Gurjar, B.R., Kazmi, A.A., Harada, H., 2017. On Site Evaluation of Performance of a Practical Scale UASB-DHS System for Treating Municipal Sewage in India. In 2nd International Conference on Recent advancements in Chemical, Environmental & Energy Engineering., February 23-24, 2017, Chennai, India (Oral presentation).
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- 9. Katiyar, R. and B. R. Gurjar, 2013. Microalage: A reservoir of energy. Accepted for oral presentation in 6th International Congress of Environmental Research (December 19-21, 2013), Aurangabad, India, and for publication in Journal of Environmental Research and Development (JERAD).
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- 13. Gosu V., Gurjar BR, 2013. Removal of nitrogeneous heterocyclic compounds from pharmaceutical industries, International Conf. on Advances in Chemical Engg. Feb. 22-24, 2013, IIT Roorkee, India.
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- 33. Gurjar, B.R., M. Mohan, 2003. Potential air quality and climatic impacts of the Thar Desert: A review analysis of regional aerosol chemistry and physics. Presented in the Desert Technology-7 International conference, 9-14 November 2003, Jodhpur, India.
- 34. Vijay, S., B.R. Gurjar, 1999. Nuclear Power and Risk Communication: An alternate model based on Indian value system. Proceedings of International Seminar on Nuclear Power in 21st century: Challenges and Opportunities (sponsored by the Council of Power Utilities, and Central Board of Irrigation & Power, GoI), 21-22 April 1999, Mumbai, India, pp. 146-151.

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- 2. Gurjar, BR, 2017. Carbon Capture and Storage. Energy Future A TERI Magazine, New Delhi. URL: https://www.teriin.org/article/air-pollution-india-major-issues-and-challenges

- 3. Gurjar, B.R., 2010. Flood disaster in Pakistan: Need of a paradigm shift. Economic Times 30 September 2010. URL: <u>http://economictimes.indiatimes.com/opinion/Paradigm-shift-to-combat-disaster/articleshow/6655833.cms</u>
- 4. Gurjar, B.R., 2009. Urbanization Related Studies in India: An Overview. NewsLetters of the FP7 EC MEGAPOLI Project. Issue 5, December 2009.
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- Gurjar, B.R., 2005. Mega cities: city-states of the future. The Financial Express, Vol. XXXXIV, No. 197, Mumbai, Wednesday, November 2, 2005, p. 6

Conference/seminar/workshop proceedings edited (03)

- 1. Gurjar, B.R. (ed.), 2011. Workshop on Air Pollution and Climate Change (30 April 2011). The Institution of Engineers (India) Roorkee Local Centre, IIT Roorkee Campus, Roorkee. 70 p.
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- Gurjar, B.R. (ed.), 2006. Air Pollution and Health Impacts. Proceedings of the All India Seminar on Air Pollution and Health Impacts (23-24 Feb. 2006). The Institution of Engineers (India) Roorkee Local Centre, IIT Roorkee Campus, Roorkee. 234 p.

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- 1. Gurjar, B.R., 1996. Green Production Systems. Cleaner Production in industry: integrating business goals and environment. Manufacturing Engineer 75 (2), 60. ISSN: 0956-9944
- Gurjar, B.R., 1996. Product Development and the Environment. Engineering Management Journal 6 (5), 232. ISSN: 0960-7919
- 3. Gurjar, B.R., 1995. Compendium of Ergonomics. A guide to the ergonomics of manufacturing. Manufacturing Engineer 74 (5), 211. ISSN: 0956-9944

Thesis, dissertation, academic reports (06)

- 1. Gurjar, B.R. Environmental risk analysis for industrial siting, planning and management: Ph.D. thesis. New Delhi: Centre for Atmospheric Sciences, I.I.T. Delhi, India, 1999. 216 p.
- 2. Gurjar, B.R. Formulation and application of a simple numerical method to determine the first-stage BOD constants from a series of BOD Measurements: M.E. dissertation. Jodhpur: Department of Civil Engineering, Faculty of Engineering, J.N.V. University, Jodhpur, Rajasthan, India, 1992.
- 3. Gurjar, B.R. Principles and methods of sewage sludge treatment: Seminar report. Jodhpur: Department of Civil Engineering, Faculty of Engg., J.N.V. University, Jodhpur, India, 1991.
- 4. Gurjar, B.R. Design of an earthen dam: Project report. Jodhpur: Department of Civil Engineering, Faculty of Engineering, J.N.V. University, Jodhpur, Rajasthan, India, 1988.
- 5. Gurjar, B.R. Construction of bridge over river Chambal at Palighat, Sawai Madhopur: Training project report. Jodhpur: Dept. of Civil Engg., Faculty of Engg., J.N.V. Univ., India, 1986.
- 6. Gurjar, B.R. Construction of forest hostel building: Training project report. Jodhpur: Department of Civil Engineering, Faculty of Engg., J.N.V. Univ., Jodhpur, Rajasthan, India, 1985.

Technical reports, monographs, manuals (13)

- 1. Report on EIA/EMP study conducted for a Common Solid Waste treatment, storage & disposal facility (CSWMF) in Sector-5, SIDCUL-Haridwar, Uttarakhand. IIT Roorkee (2011), 141p.
- 2. Environmental Impact Assessment of a proposed Common Hazardous Waste Management Facility (CHWMF), Mauza Mukimpur, Roorkee. IIT Roorkee (2008), 113p.
- 3. Energy and Environmental Policy Analysis in Indian Context. IIT Roorkee (2007), 33p.
- 4. Temperature trends over India in the past century: An analysis in the regional & global climate change context. IIT Roorkee (2007), 46 p
- 5. Energy & carbon efficiency in India and some other countries. IIT Roorkee (2007), 37 p.
- 6. Impact of taxation and subsidies on prices and consumption of petroleum products in India and some other countries. IIT Roorkee (2007), 42 p.
- 7. Environmental Impact Assessment of Doon Cyber Towers at SIDCUL IT Park, Dehradun. IIT Roorkee (2007), 79 p.

- 8. Environmental Impact Assessment of SARA Industrial Estate, Dehradun. IIT Roorkee 2007, 69p.
- 9. EIA of Dev Bhoomi Industrial Estate at Bandakheri, Roorkee. IIT Roorkee (2006), 66 p.
- 10. Energy Conservation through Energy Audit in Selected Medium and Small Scale Industries, NITTTR Chandigarh (1999), 90 p.
- 11. Environmental Impact Assessment (Air Quality) of proposed 500 MW Thermal Power Plant to be sited in Mangrol area of Chittorgarh, Rajasthan, IIT Delhi (1994), 90p.
- 12. Tracer Study of Employment Status of Polytechnic Pass-Outs, NITTTR Chandigarh (1999), 127 p
- 13. Facilities and Incentives to Entrepreneurs, NITTTR Chandigarh (1998), 196 p

Stories Published on Research Findings and Publications

- Story based on article "Kumar, P., Gurjar, B.R., Nagpure, A., Harrison, R.M., 2011. Preliminary estimates of particle number emissions from road vehicles in megacity Delhi and associated health impacts. Environmental Science and Technology.2011, 45, 5514–5521" published in Nature India with title "Deadly vehicular nanoparticles pollute cities" doi:10.1038/nindia.2011.125; Published online 29 August 2011.
- Story based on article "Nagpure, A. S., Gurjar, B. R., Kumar, P., 2011. Impact of altitude on emission rates of ozone precursors from gasoline-driven light-duty commercial vehicles, Atmospheric Environment 45, 1413-1417" published in Vertical News with title "Data on Ozone Discussed by Researchers at Indian Institute of Technology" <u>http://www.verticalnews.com/premium_newsletters/Journal-of-India/2011-04-05/67690JI.html</u>; Published online 5 April 2011.
- 3. Breathless in the Megacity. Special feature coverage on IITR's Max Planck Partner Group's research findings on megacities emissions and air quality in Max Planck Society's International Magazine. Max-Planck-Gesellschaft (Max Planck Research); September 22, 2011. URL: http://www.mpg.de/4433733/India_Megacity

<u>Conferences Organized, Production of Educational TV Programs, Short Term Courses Conducted,</u> <u>Courses Developed</u>

Conferences/Workshops/Seminars Organized

- 1. Convener, Brainstorming workshop on Urban Air Pollution in India, 25 November, 2007. The Institution of Engineers (India) Roorkee Local Centre, IIT Roorkee Campus, Roorkee, India.
- 2. Organizing Committee Member, International workshop on Climate Change and Disaster Losses: Understanding and Attributing Trends and Projections, 25-26 May 2006 - Hohenkammer, Germany.
- 3. Coordinator, All India Seminar on Air Pollution & Health Impacts, February 23-24, 2006., The Institution of Engineers (India) Roorkee Local Centre, IIT Roorkee Campus, Roorkee, India.

Educational TV Programs

Significantly contributed in the development of educational TV programs related to following areas:

- 1. School level experiments in Physics Lab. (Telecasted several times on Gyan Darshan Channel)
- 2. Entrepreneurial opportunities for Civil Engineers
- 3. Air Pollution and Health Impacts (assisted the EMMRC, IIT Roorkee, in making one ETV film and two econtents).

Short-Term Courses (STCs)/Continuing Education Programs (CEPs)

- 1. Coordinator, Short-Term Course on Technical Paper Writing, 14-15 May 2010. The Institution of Engineers (India) Roorkee Local Centre, IIT Roorkee Campus, Roorkee, India.
- 2. Training in Environmental Laboratory a consulting program sponsored by the MMM Engineering College, Gorakhpur (UP) (2005).
- 3. Industry Institute Community Interaction program in Jammu and Kashmir State of India, significantly contributed in development of project proposal for this program that was accepted for the grant of approximately Rs. 1 million under World Bank assisted project Tech-Ed-III, National Institute of Technical Teachers Training & Research (NITTTR), Chandigarh (2001).
- 4. Coordinated more than a dozen State and National level sponsored short-term training programs for technical teachers and industry personnel in the area of Industry-Institute Interaction, Environmental Management, and Entrepreneurship Development (1996 2001). Major themes of such programs were as listed below:

- i) Professional Development Program (PDP) for Industry-Institute-Interaction (III) Cell Officials and Training & Placement Officers (TPOs).
- ii) Quality System Standards: ISO 9000
- iii) Entrepreneurship Development Program with Special Emphasis on Project Report Preparation.
- iv) EDP for Women (sponsored by Small Industries Development Bank of India).
- v) Industrial Reforms and Marketing with Special Emphasis on Export Promotion.
- vi) EDP for beneficiaries of Prime Minister's Rozgar Yojana.

Curriculum and Courses Development

- 1. Organized two-day workshop on 'Curriculum Development' (18-19 March'99), TTTI, Chandigarh.
- 2. Participated and contributed as an expert in the workshop on revision of curriculum for diploma program in 'Civil Engineering' of Uttaranchal polytechnics held from 9-10 March, 2006 at National Institute of Technical Teachers' Training and Research, Chandigarh.
- 3. Developed three UG courses; i) Environmental Studies, ii) Air and Water Pollution, and iii) Environmental Management and Sustainable Development, for IITR B.Tech. (Civil) students.
- 4. Developed three PG courses; i) EIA of Transport Infrastructure System, ii) Air Pollution & Control, iii) Environmental Economics & Legislation for IIT Roorkee M.Tech. (Civil) students.

Invited Lectures, Talks, Presentations, Session Chairs, Panel Discussions, Workshop Participation

- 1. Eminent Speaker/Panelist in the International Conference (ESDACON 2019), held at the Convention Centre, JNU Delhi, on 11 to 13 January 2019.
- 2. Expert Speaker/Panelist in a two-day National Conference, Environmental Challenges for 'New India', held in Dr. Bhim Rao Ambedkar College, University of Delhi, on 2nd 3rd June 2018.
- 3. Chief Guest, Valedictory Session, National Conference on Make In India: A Vision Strategy & Goal, 29th March 2015. S.D. College of Engineering & Technology and S.D. College of Management studies, Muzaffarnagar, U.P.
- 4. Environment Impacts of the transport sector and how to mitigate them. Invited Lecture delivered on 13th March, 2015 at CAG of India's International Center for Environment Audit and Sustainable Development, Jaipur.
- 5. Emissions from Megacities and their Health Impacts. Invited talk delivered during international scientific seminar on "Knowledge transfer on Indian mega-cities: developing effective environmental mitigation strategies" held from 18-20 February 2015 at the Edinburgh Centre for Carbon Innovation (ECCI), Edinburgh, U.K.
- 6. Fundamentals of water and wastewater treatment. Invited talk delivered at S.D. College of Engg. & Tech., Muzaffarnagar, U.P., India. 27 September 2014.
- 7. Assessment and control of urban air pollution in large cities of India. Keynote lecture during All India Seminar on "Methodologies for Air pollution control" (30-31 August 2013); MNIT, Jaipur.
- 8. Urban AIR Quality Conditions in Large cities of India. Talk delivered on 12 August 2013 at College of Engineering EAN University, Bogota, Colombia.
- 9. Urban pollutants and inventory in Asia/India. Talk delivered during International Workshop on Inventory, Modeling and Climate Impacts of Greenhouse Gas emissions (GHG's) and Aerosols in the Asian Region (June 26-28, 2013), Tsukuba, Japan.
- 10. Urban Transport Emissions Modeling. Talk delivered during Workshop on "Regional Atmospheric Chemistry: Emerging Trends" (6-7 May 2013), Physical Research Laboratory, Ahmedabad, India.
- 11. Urban Transport Emission Modeling. Distinguished Speaker during National Workshop on "Sustainable Transportation for Indian Cities (STIC 2013)" (22 March 2013), CSIR-CRRI, New Delhi, India.
- 12. Emission Inventories in India. Talk delivered during Workshop on 'Indo-US Project on Climate Change and Air Quality' 14-15th May 2012; TERI University Campus, Vasant Kunj, New Delhi. Organised by The Energy & Resources Institute and IIT-Kanpur (Partners NEERI, C-DAC, IITM, IIT-Roorkee, NCSU (US).
- 13. Air Pollution Emissions and Health Impacts in Megacity Delhi. Technical talk delivered during one-day seminar on "Urban Challenges in the Context of Climate Change" held on 20th April 2012 at Civil Engg. Dept., IIT Delhi (in partnership with Liberty Institute, New Delhi, with the support of Friedrich Naumann Foundation for freedom Germany).

- 14. Emissions and air quality in South Asian Megacities. Presentation made during Workshop on "Atmospheric Chemistry in South Asia: Progress and Emerging Issues" (5-6 March 2012). Organized by IISER, Mohali, Punjab, India.
- 15. Environmental Issues of Transport Sector with a Special Emphasis on Vehicular Emissions and Ambient Air Quality. Technical talk delivered during National Workshop on "Transportation Challenges 2022 and R & D Needs", 1-2 March 2012, CRRI, New Delhi.
- 16. Networking Conference on "New Frontiers: Shifting Trends in the Global Research Landscape and their Impact on Researchers' Career Patterns" and Workshop on "Alumniportal Deutschland", March 29-31, 2012, Gurgaon, India. Organized by Alexander von Humboldt Foundation, Germany.
- 17. Chaired a session "Long-term variation and future projections in Asian emission" during Third International Workshop on Emission Inventory in Asia, February 24-25, 2012; Yokohama, Japan.
- 18. Emissions and Air Quality in South Asian Megacities. Presented during Third International Workshop on Emission Inventory in Asia, February 24-25, 2012; Yokohama, Japan.
- 19. CSE-IIT Second National Research Conference on Climate Change. November 5-6, 2011 @ IIT Delhi. Organized by the Centre for Science and Environment (CSE), IIT Delhi and IIT Madras.
- 20. The World Bank Workshop on the Bank and Global Best Practices in Environmental Management and Role of Training & Knowledge Network. June 13-14, 2011, New Delhi.
- 21. Workshop on Cleaner liquid fuels and improved vehicular technologies, 31st May 2011, India Habitat Centre, New Delhi. Jointly organized by the International Council on Clean Transportation (ICCN), and TERI, New Delhi, India.
- 22. 3rd Bi-annual Meeting of Heads of Max Planck Partner Groups, 20-21 February 2011, IIT Delhi.
- 23. One-day International seminar on "Integrated Pollution Prevention and Control: Sharing experience with special focus on air pollution". India Habitat Centre, New Delhi, India. Held by European Union and MoEF, Govt. of India. 17 February 2011.
- 24. Chaired the Thematic Session on "Urban Heat Island and Indoor Air Quality" during the Summit on Sustainable Habitat 2011 held on 9th December 2011 at New Delhi.
- 25. Urban Heat Island and Indoor Air Quality: Their Role in Sustainable Urban Built Environment. Presented during the Summit on Sustainable Habitat 2011 held on 9th Dec. 2011 at New Delhi.
- 26. Application of Sustainable Green Technologies, Green Buildings and Environmental Management. Presented @ National Seminar on "Emerging Trends in Civil Engg." from 16-17 Nov., 2011. NITTTR, Chandigarh.
- 27. Study of the urban transport system of megacity Delhi with co-benefits approach. Presented during Workshop on Urban Development with Co-benefits Approach" on 24-27 July 2011, United Nations University Institute of Advanced Studies (UNU-IAS), Yokohama, Japan.
- 28. Gaseous and particulate emissions in Indian megacities. Lecture during Second International Workshop on Emission Inventory in Asia. Tsukuba International Conference Center (EPOCHAL Tsukuba), Tsukuba (Japand). March 11-12, 2011.
- 29. Environmental Pollution & its Impact on Health. Lecture @ 4th National Conf. Health Impacts of Polluted Environment: Assessment & Solutions. India International Centre Annexe, N. Delhi. Feb. 25-26, 2011.
- 30. Mortality and Mobidity due to Air Pollution in Megacities. Lecture at Regional Atmospheric Modeling Section, Asian Environmental Research Program, National Institute for Environmental Studies, Tsukuba, Japan. December 24, 2010.
- 31. NO_x and NO_y Emissions and Impacts. Presentation as a panelist (Panel-1 Human Health: Nitrate and Human Health; session conducted by Dr. S.K. Gupta) during 5th International Nitrogen Conference on "Reactive Nitrogen Management for Sustainable Development Science, Technology and Policy", The Ashok, New Delhi. December 4, 2010.
- 32. Advances in Air Pollution Control. Lecture during a short term course titled 'Green technologies for energy security public health and clean environment'. The Institution of Engineers (India) Roorkee Local Chapter, Roorkee, India. August 27, 2010.
- 33. Mega-cities and global change. Talk delivered during German Indian Partnership for IT-Systems (GRIP-IT) Workshop, July 23, 2010, Bangalore. Organized by acatech German Academy of Science and Engineering.
- 34. Human Health Risk in Megacities due to Air Pollution: A Comparative Study. Lecture at the United Nations University Institute of Advanced Studies (UNU-IAS) Seminar Series, Yokohama, Japan. March 05, 2010.
- 35. Gaseous Emissions in Asia with special reference to megacities in China, India and Japan. Presentation in the First International Workshop on Emission Inventory in Asia at National Institute for Environmental Studies (NIES), Tsukuba, Japan. March 1, 2010.

- 36. Trace Gas Emissions in India/Asia with special reference to Megacities. Talk during 2nd Review Meeting of Atmospheric Trace gases Chemistry, Transport and Modeling (AT-CTM), Project of ISRO-GBP. Aryabhatta Res. Inst. of Observational Sc. (ARIES), Nainital, India. Jan. 29, 2010.
- 37. Health Risks in Megacities Due To Ambient Air Pollution. Lecture during Environmental Health and Safety Management; a Short-Term Course sponsored by AICTE and organized by QIP Centre and Chemical Engineering Department, IIT Roorkee, India. January 25, 2010.
- Carbon Capture and Sequestration. Keynote presentation during session on Role of Cleaner Production in Mitigation of Global Warming. National Seminar on Cleaner Production Technologies. NITTTR, Chandigarh, India. November 17-18, 2009.
- 39. GHG emissions from cooking fuels used in Indian Megacities: Estimates and Implications. Presented during GEIA International Conference on Emissions of Gases and Aerosols> Progress and Modeling Needs, 26-28 October, 2009, University of Oslo, Oslo, Norway.
- 40. Chaired Session on Eco-Friendly Processes and Materials, Safe Drinking Water, 5th Annual Session of Students Chemical Engg. Congress. Chemical Engg. Dept., IITR, India. Sept. 20, 2009.
- 41. Megacities Emissions and Global Climate Change. Lecture during Indo-UK Workshop on Water Resources Management under Climate and Environment Change. Department of Civil Engineering, IIT Roorkee, India. September 12-13, 2009.
- 42. Workshop on Comprehensive Environmental Pollution Index (CEPI) for Industrial Clusters. Organized by Central Pollution Control Board (CPCB) in collaboration with the Indian Institute of Technology Delhi. The Ashok, New Delhi, India. December 24, 2009.
- 43. Workshop on Development of Environmental Pollution Index (EPI) for Industrial Clusters/ Areas. Organized by Central Pollution Control Board (CPCB) in collaboration with the Indian Institute of Technology, Delhi, IIT Delhi, New Delhi, India. October 24, 2009.
- 44. Workshop on Web of Science As a Research Tool. IIT Roorkee, India. October 6, 2009.
- 45. MPG-India Partner Group Head Meeting. S.N. Bose National Centre for Basic Sciences, Kolkata, India. February 25-27, 2009.
- 46. Workshop on Hazardous Air Pollutants: Monitoring & Control; organized by Indian Association for Air Pollution Control (Delhi Chapter) and Central Pollution Control Board, Delhi. WWF- INDIA, Lodi Estate, New Delhi, August 23, 2008.
- 47. Indo-Swedish Workshop on Sustainable Urban Development; organized by Centre for Indian Swedish Cooperation on Technical Research and Education (INSTEC). Casurina Hall, IHC Complex, Lodi Road, New Delhi, April 4, 2008.
- 48. International Conference on Energy Efficiency & Climate Change; jointly organized by IIT Delhi Alumni Association and IIT Delhi, New Delhi. April 4, 2008.Urban Heat Island Potential in Megacities with special reference to Delhi. Presentation during 4th Workshop on the Asian Urban Heat Island Issues. Meisei Univ., Tokyo, Japan. Dec. 25, 2008.
- 49. Role of Megacities in Global Change. Public Lecture at UNAM (UNIVERSUM), Universidad Nacional Autonoma de Mexico, Mexico City, Mexico, December 10, 2008.
- 50. Emission and Air Quality in South Asian Megacities. Seminar presented @ Centro de Ciencias de la Atmosfera, Universidad Nacional Autonoma de Mexico, Mexico City, Mexico, Dec. 08, 2008.
- 51. Study of Technological & Policy Measures to Reduce Vehicular Emissions in Megacity Delhi. Presented @ Air Pollution Management Training Course Regional Workshop; organized by Sida (Sweden) & Pollution Control Dept. (Thailand). Siam City Hotel, Bangkok, April 21-25, 2008.
- 52. National Implementation Plan on Stockholm Convention: Status in India. Presented @ Regional Workshop on "Hazardous Chemicals Management"; organized by the Foundation for Scientific and Ind. Res. of Norway, AIT, and Poll. Control Dept., Thailand. AIT Bangkok, Dec.10-14,2007.
- 53. Urban Environment Modeling. Presentation during QIP STP on Urban Transportation Planning; IIT Roorkee, India. June 27, 2007.
- 54. Stakeholder Workshop on Greenhouse Gas & Air Pollution Interactions and Synergies (GAINS-Asia), organized by TERI(India) & IIASA (Austria). Amaltas, IHC-Complex, New Delhi. 25Oct. 2007.
- 55. Workshop on "Integrated Development of Public Transport System"; Jointly organized by Centre for Transport Systems (CTRANS), Indian Institute of Technology Roorkee, and Queensland University of Technology, Birsbane, Australia. IIT Roorkee, Oct. 13, 2006.

- 56. Experts' Workshop on "Climate Change Adaptation and Rural Livelihoods Practical Approaches to Risk Management"; organized by German Technical Cooperation (GTZ), New Delhi. The Grand Hotel, Nelson Mandela Road, Vasant Kunj, New Delhi. September 12, 2006.
- 57. Megacities and Global Change. Lecture at the Group of Sustainability and Technology at the Dept. of Management, Technology, and Economics of ETH Zurich, Switzerland. May 22, 2006.
- 58. Emissions and air quality trends in Indian megacities. National Level Brainstorming Workshop: Indian Urban Air Quality 2005, Oct 24-25, 2005. NEERI, Nagpur (India).

Extracurricular: Poetry, Music, Philosophy, and Literature.