

Dr. Shailendra Kumar



Associate Professor

Department of Microbiology

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Current Position held: Associate Professor: 2014 – till date

Previous Positions: Assistant Professor: Stage 3: 2011-2014

Assistant Professor: Stage 2: 2006-2011

Lecturer: 2001-2006

Academic Profile:

2012: Ph.D. in Microbiology from Dr. Ram Manohar Lohia Avadh University, Faizabad.

Research Topic: Studies on characterization and molecular identification of water borne enteric pathogens from Faizabad region.

Brief Synopsis of Research:

The study was an attempt to assess the physicochemical and microbiological quality of water from various drinking and recreational sources in the region. The physicochemical characterization of water was followed by isolation, biochemical identification, antibiotic resistance and heavy metal tolerance of enteric bacterial isolates from various water sources. The molecular characterization employing RAPD, PCR-RFLP of 16S rDNA, and phylogeny by analyzing sequences of 16S rDNA of representative strains was also carried out.

2000: M.Phil. in Life Science, Jawaharlal Nehru University, New Delhi

One year pre-M.Phil./Ph.D. course work followed by dissertation on topic: Characterization of *Piriformospora indica*- A Mycorrhiza Like Fungus.

1998: M.Sc. in Microbiology with First Division from Dr. Ram Manohar Lohia Avadh University

The course work included studies on General Microbiology, Agricultural and Environmental Microbiology, Principles of Biochemistry, Instrumentation & Analytical

Techniques, Medical Microbiology (Bacteriology, Virology, Mycology & Parasitology) and Immunology, Microbial Genetics, Food & Industrial Microbiology.

Dissertation topic: Antimicrobial properties of Medicinal and Aromatic plants.

1996: B.Sc. (Biology) with First Division from Dr. Ram Manohar Lohia Avadh University, With Botany, Zoology and Chemistry.

Current Research Areas:

- Biosynthesis, characterization and application of nanoparticles
- Analysis of water samples for characterization of waterborne enteric pathogens
- Host pathogen relationship and characterization of factors affecting pathogenesis
- Characterization of Multidrug resistance in pathogenic bacteria
- Studies of behavioural intervention on improvement of quality life
- Microbiological treatment of waste water

Honors/Awards

- Young Scientist Award by ICFA 2018 in the International Conference on Food & Agriculture held during 29-31 March 2018 in Dhanbad, Jharkhand, India
- Excellence in Teaching Award honored by Society for Agriculture innovation and Development (SAID), Ranchi (Jharkhand) India during National Conference on Livelihood and Food Security (LFS-2018) on 27-28 January 2018 at Bihar Veterinary College, Patna.
- Distinguished Scientific Award honored by Society for Agriculture innovation and Development (SAID), Ranchi (Jharkhand) India during International Conference on Advances in Agricultural and Applied Sciences for Promoting Food Security on 13-15 May 2017 at Hotel Mirage Lords Inn, Battisputli, Kathmandu, Nepal
- Junior Research Fellowship (JRF), Joint UGC-CSIR JRF/NET, New Delhi (1999).
- JNU-UGC - Junior Research Fellowship during M.Phil. at JNU (1998-2001).

Professional Membership

- Life Member of Society of Biological Chemists (India).
- Life Membership of Society for Agriculture Innovation & Development, Ranchi
- Life Membership of Association of Microbiologists of India
- Life Membership of IAPS

Research Project Undertaken

- Successfully completed minor research project entitled “Characterization and molecular identification of Water borne enteric pathogens” funded by University Grants Commission, New Delhi, India (2008-2011).

Research Projects Applied

- Comparative gut microbiome analysis of yoga performers and nonperformers
- Studies on microbial community available in Tikri (Gonda) forest region

Teaching & Professional Experience

- Attended Refresher Course in Environmental Education (ID) during 03-23 February 2017 at Human Resource Development Centre, DDU Gorakhpur University, Gorakhpur
- Attended 7 day Self-Financed Workshop on Flow Cytometry: Applications in Research, Diagnostics and Health Care Innovation during 15-21 December 2015 held at Centre for Medical Diagnostic and research, Motilal Nehru National Institute of Technology, Allahabad.
- Attended Refresher Course in Biotechnology during 16 July to 09 August 2012 at Academic Staff College, Jawaharlal Nehru University, New Delhi
- Attended workshop on bioinformatics at D.Y. Patil University, Navi Mumbai during 21-25th March, 2012.
- Attended Refresher Course in Life Science during 08 January to 02 February 2007 at Academic Staff College, Jawaharlal Nehru University, New Delhi
- Attended Orientation Programme during 01-28 September 2005 at Academic Staff College Lucknow University, Lucknow
- Using Audio-visual methods of teaching since beginning of carrier. Lectures are delivered using multimedia power-point presentations and animations to demonstrate processes in biological system.
- Teaching two papers i) Medical Microbiology & Immunology and ii) Instrumentation & Analytical techniques to M.Sc. students since 2001 through class teaching, seminar, laboratory experiments, discussions, etc.
- Supervising M.Sc. students for their research projects during fourth semester.
- Good experimental skills with working experience on basic microbiology, molecular cloning, gene expression, mutational analysis, electrophoresis analyses, gene sequence analyses, bioinformatic analyses, etc.

Research Publications

1. Tripathi M, Pandey R, **Kumar S** (2018). Biodecolorization of Orange II dye by native *Bacillus* sp. and *Staphylococcus* sp. in simulated medium. *Journal of Pharmacognosy and Phytochemistry*, 7(SP I): 1366-1368.
2. Tripathi M, Haroon M, **Kumar S** (2018). Antibiotic resistance in *E. coli* isolates associated with child diarrhea cases. *Journal of Pharmacognosy and Phytochemistry*, 7(SP I): 1300-1303.
3. Tripathi M, Singh DN, Vikram S, Singh VS, **Kumar S** (2018). Metagenomic Approach towards Bioprospection of Novel Biomolecule(s) and Environmental Bioremediation. *Annual Research & Review in Biology*, ISSN: 2347-565X 22 (2), 1-12, DOI: 10.9734/ARRB/2018/38385
4. **Kumar S**, Tripathi VR, Vikram S, Kumar B, Garg SK (2017). Characterization of MAR and heavy metal-tolerant *E. coli* O157: H7 in water sources: a suggestion for behavioral intervention. *Environment, Development and Sustainability*, ISSN: 1387-585X (print) 1573-2975 (online), 1-15, doi.org/10.1007/s10668-017-9998-5
5. Tripathi VR, Sahashrabuddhe AA, **Kumar S**, Garg SK (2014). Purification and characterization of a trypsin inhibitor from *Senna tora* active against midgut protease of podborer. *Process Biochemistry*. 49(2)347-355 (IF: 2.89). ISSN: 1359-5113
6. **Kumar S**, Tripathi VR, Garg SK (2013). Antibiotic resistance and genetic diversity in waterborne enterobacteriaceae isolates from recreational and drinking water sources. *International Journal of Environmental Science and Technology*, 10(4):789-798. DOI: 10.1007_s13762-012-0126-7. (IF 1.88). ISSN: 1735-1472 (print) 1735-2630 (online)
7. Tewari S, Tripathi M, Ramteke PW, **Kumar S**, Garg SK (2013). Plasmid mediated transfer of antibiotic resistance and heavy metal tolerance in thermotolerant water borne coliforms. *African Journal of Microbiology Research* DOI: 10.5897/AJMR12.1563. (IF 0.58). ISSN: 1996-0808
8. Garg SK, Tripathi M, **Kumar S**, Singh SK, Singh SK (2012). Microbial dechlorination of chloroorganics and simultaneous decolorization of pulp–paper mill effluent by *Pseudomonas putida* MTCC 10510 augmentation. *Environmental monitoring and assessment* 184 (9), 5533-5544. (IF 1.68). ISSN: 0167-6369 (Print) 1573-2959 (Online)
9. **Kumar S**, Tripathi VR, Garg SK (2012). Physicochemical and microbiological assessment of recreational and drinking waters. *Environmental Monitoring and*

Assessment. 184(5): 2691-2698. (IF 1.68). ISSN: 0167-6369 (Print) 1573-2959 (Online)

10. Tripathi VR, **Kumar S**, Garg SK (2011). A study on trypsin, *Aspergillus flavus* and *Bacillus* sp. protease inhibitor activity in *Cassia tora* (L.) syn *Senna tora* (L.) Roxb. Seed extract. BMC Complementary and Alternative Medicine. 11: 56. (IF 2.28). ISSN: 1472-6882
11. **Kumar S** (2010). Characterization of *E. coli* isolates from diarrhea samples and their antibiotic sensitivity assay. International Research Journal of Commerce, Arts and Science. 183-192. ISSN: 2319-9202
12. **Kumar S** (2010). Molecular methods for characterization and identification of *Salmonella* spp.: A review. International Research Journal of Management Science and Technology. 203-213. ISSN: 2348-9367 (Print) 2250-1959 (Online)
13. **Kumar S** (2009). Bacteriological quality of water. Spectrum: Journal of science and society for sustainable development. 07-13.
14. Naraian R, Sahu RK, **Kumar S**, Garg SK, Singh CS, Kanaujia RS (2009). Influence of different nitrogen rich supplements during cultivation of *Pleurotus florida* on corn cob substrate. Environmentalist. 29: 1-7. ISSN:

Book Chapter and Review Articles

1. **Kumar S**, Garg SK, Varma A (2003). *Piriformospora indica*: A novel fungus. In: Frontiers of fungal diversity in India. (Eds: Rao GP, Manoharachi C, Bhat DJ, Rajak RC and Lakhanpal TN). International Book Distributing Co., India. pp: 391-400.
2. Tripathi M, **Kumar S**, Yadav SK (2017). Rhizospheric microorganisms: A bioweapon agent for sustainable agriculture. In: Environmental Issues पर्यावरणीय मुद्दे: बहुआयामी परिप्रेक्ष्य (Eds: Yadav L and Tripathi G), Adhyayan publisher and Distributors, New Delhi, India, pp: 127-132.

Sequence Submissions at National Centre for Biotechnology Information

- Nucleotide sequence information of 16S rDNA of six waterborne *Enterobacteriaceae* isolates are published at genbank, NCBI. The accession numbers of the sequences are as follows
- | | | |
|--------------|---------------|---------------|
| ▪ JN185439.1 | ▪ 1HQ286917.1 | ▪ HQ322394.1 |
| ▪ JN185438.1 | ▪ HQ322395.1 | ▪ HQ322393.1. |

Poster/Paper Presented in Conferences

1. **Kumar S** (2018). Contamination of ground water: a problem of concern. Presented an **invited talk** during 22nd International Conference of International Academy of Physical Sciences (CONIAPS XXII) on Emerging Trends in Physical Sciences held on 13-15 April 2018 at Dr. Ram Manohar Lohia Avadh University, Faizabad.
2. **Kumar S** (2018). Rhizospheric bacteria: An important bio-tool for sustainable agriculture. Presented a paper during the International Conference on Food & Agriculture held on 29-31 March 2018 at Dhanbad, Jharkhand.
3. **Kumar S** (2018). Biosynthesis of Silver Nanoparticles & its use against bacterial pathogens. Presented an **Invited talk** during International symposium on Environmental, Educational and Biological Research for Human Welfare (EEBRHW)-2018 held on 25-26 March 2018 at BHU, Varanasi.
4. **Kumar S**, Tripathi M (2018). Nanotechnology: An effective tool for improved agriculture. Presented an **invited talk** during Biosangam 2018 An International Conference on Innovations and Translational Dimensions: Food, Health and Environmental Biotechnology held at Motilal Nehru National Institute of Technology, Allahabad on 09-11 March 2018.
5. **Kumar S** (2017). Multi Drug Resistance in Bacterial Isolates from Dental Plaque: A Suggestion for Behavioral Intervention. Paper Presented in Microbes for Sustainable Development: Scope & Applications (MSDSA-2017) during 58th Annual Conference of Association of Microbiologists of India 2017 held at Babasaheb Bhimrao Ambedkar (A Central) University Lucknow, (U.P) on 16-19 November 2017.
6. **Kumar S**, Sharma M. (2015). Multiple antibiotic resistant *Salmonella sp.* isolates from drinking water Samples. Poster presented in 56th AMI Conference at JNU, New Delhi held during December 07 to 10, 2015.
7. **Kumar S**, Tripathi VR, Garg SK (2015). Multidrug Resistant *E. coli* O157 isolates from recreational and drinking water sources. Paper presented at National conference entitled "Biotechnology and Human Welfare: New Vistas" held at VBS Purvanchal University, Jaunpur (U.P.) during March 21-22, 2015.
8. **Kumar S**, Monika Patel, Suman Yadav, Farheen Khan, Jagdeesh Prasad (2015). Drug Resistance in bacterial isolates from dental plaque. Paper presented at International Symposium Innovations in Educational, Environmental & Health

Research (ISIEEHR-2015) held at Banaras Hindu University, Varanasi (U.P.) during February 23-24, 2015.

9. **Kumar S**, Tripathi VR, Garg SK (2014). Antimicrobial effect of protease inhibitor from *Senna tora* seed. Paper presented at Lucknow Science Congress held at Babasaheb Bheemrao Ambedkar University, Lucknow during March 27-28, 2014.
10. **Kumar S**, Patel M, Yadav S, Khan F, Prasad J, Tripathi VR (2014). Microbial diversity in oral cavity and their antibiotic resistance: A threat. Invited Lecture presented in National Conference on Diversity and Physiology of Desert Fauna held at Jai Narain Vyas University, Jodhpur during February 7-8, 2014.
11. **Kumar S**, Tripathi VR, Garg SK (2013). Multi drug resistance in waterborne *Enterobacteriaceae* pathogenic isolates. Paper presented in 1st International Forum on Asian Water Environment Technology held at JNU, New Delhi during December 18-20, 2013.
12. Tripathi VR, **Kumar S**, Garg SK (2013). Antimetabolic effects of *Senna tora* trypsin inhibitor on pod borer *Helicoverpa armigera*. Paper presented in International conference on Health, Environment and Industrial biotechnology 'Biosangam' held at MNNIT, Allahabad, during November 21-23, 2013 (Awarded best oral presentation in agricultural biotechnology)
13. **Kumar S**, Tripathi VR, Kumar V (2013). Perils of neglecting waterborne diseases in India. Paper presented in 9th Annual Conference of Uttar Pradesh and Uttarakhand Economic Association (UPUEA) held at Dr. Ram Manohar Lohia Avadh University, Faizabad during October 26-27, 2013.
14. **Kumar S**, Tripathi VR, Garg SK (2011). Antibiotic sensitivity and molecular characterization of *Enterobacteriaceae* isolates in recreational and drinking water sources. Paper presented in Conference on "Environmental Problems in India and challenges to Plant Biologist" held at UP College Varanasi during February 4-5, 2011.
15. **Kumar S**, Tripathi VR, Garg SK (2010). Microbiological assessment of water quality and enteric isolates from different water sources in Ayodhya-Faizabad region. Poster presented in 51st AMI held at BIT Mesra, Ranchi during December 14-17, 2010.
16. **Kumar S**, Garg SK, Varma AK (2002). Effect of commonly used fungicides on *Piriformospora indica* - a mycorrhiza like fungus. Paper presented at National

Conference on Environmental Biology at Saurashtra University, Rajkot (Gujrat), during October 17-18, 2002.

Number of M.Sc. Dissertation Supervised 15

Ph.D. Supervised (Enrolled) 01

Guest Lecture Presentations

- Lectures on “HIV/AIDS” and “Health & Hygiene” to cadets of 10/65 Coy NCC, Dr. Ram Manohar Lohia Avadh University, Faizabad (19 December 2016)
- Lectures on “Introduction of Immunology”, “Cells and Organs of Immune system”, “Nonspecific and Specific host defense”, “Antibody diversity”, “Expression of B and T cells” delivered at Department of Biotechnology, V.B.S. Purvanchal University, Jaunpur (28-29, September 2012).
- Invited lectures on “Microscopic Techniques” and “Genetically Modified Organisms” Department of Environmental Microbiology, Babasahab Bheemrao Ambedkar University, Lucknow (October 2010).
- Invited lectures delivered on the topics “Hydrophobia: Rabies” (2008), “Role of Immune System in HIV Infection” (2008), “Quality of water: Microbiological Aspects” (2009), “Secondary infections in AIDS patients” (2009) at Department of Microbiology, KNIPSS, Sultanpur.
- Series of guest lectures on “Medical Bacteriology” Department of Biotechnology, Dr. Ram Manohar Lohia Avadh University, Faizabad (2006-2008).
- Lectures on “Confocal Laser microscopy: working and applications” Munshi Raghunandan Prasad Patel Mahila Degree College, Barabanki (December 2007).

Member Editorial Board

- Spectrum: Journal of science and society for sustainable development

Reviewer

- World Journal of Microbiology & Biotechnology

Extension Activities

- Presentation of talk on the topics “जल संकट से बचाव एवं उपाय”, एंटीबायोटिक दवाओं की बढ़ती निष्क्रियता” and “सूक्ष्मजीवों का हमारे जीवन पर प्रभाव” on All India Radio, Faizabad during 2016-2017.

- Delivered Lecture on “Careers in Biology” to class XI & XII students at J.B. Academy, Faizabad on 19th July 2017.
- Awareness programme for rural public on health and hygiene to safe form infectious diseases.
- Awareness programme for children by presentations and demonstration of bacteria in various foods, water and biological samples to school children.

Consultancy Services

- Water quality analysis

Board Membership

- Member of Board of studies in the department, Dr. Ram Manohar Lohia Avadh University, Faizabad
- Member of board of Science faculty of university
- Member of several committees of the university as assigned time to time.

Department Developmental Activities

Carried out the execution of the following departmental grants from DST-FIST and Government of U.P.

- DST-FIST Level-I (2000-2005)
- Centre of Excellence (2009-2011)
- DST-FIST Level-I (2011-2014)

Administrative Responsibilities

- Department Store responsibility- 2001-2009; 2014-2017
- Assistant Proctor- 2001-2002
- Assistant Dean Students Welfare- 2009-2011; 2017-till date
- Care Taking Officer (NCC)- October 15, 2009 to November, 2011
- Superintendent, Saryu Boys Hostel, September 2016- till date

Nodal Coordinator

- J.E.E. B.Ed. Entrance Exam 2018 for Faizabad Centre

Examination Observer

- In the capacity of observer conducted several examinations of MBBS/BDS/MD/MS at Era’s LMC, Carrier Dental College, Sardar Patel Dental College, Lucknow, Chandra Dental College, Hind Institute of Medical Sciences, Barabanki.

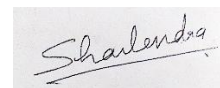
- Ph.D. Entrance Examination of the University conducted on 25th may 2018.

Examination Superintendent

- Back paper Examinations, December 9, 2012
- Semester Examinations, December, 2012
- M.B.A./B.B.A./ B.C.A./M.P.Ed. Examinations, Feb-Mar, 2012
- Joint B.Ed. Entrance Examination 2013, April 24, 2013
- Main Annual Examinations, May, 2013
- Semester Examinations, May, 2012
- M.B.A./B.B.A./ B.C.A./M.P.Ed. Examinations, June, 2013
- M.Ed. Entrance Examination 2012
- M.Ed. Entrance Examination 2013, July 07,2013
- Back paper Examinations, November 29, 2013
- U.P. Police Recruitment Board Exam December 15, 2013
- M.B.A./B.B.A./ B.C.A./M.P.Ed. and residential courses semester Examinations, Jan, 2014

Participation in Admission Examination Work

- Assistant Coordinator in Residential Courses Admission Test (RCAT) 2010.
- Active Participation in admission test for admission to M.Sc. programme in Microbiology, Biochemistry and Environmental Sciences during session 2002-2003.



(SHAIENDRA KUMAR)