




**RAM LAL ANAND COLLEGE (University of Delhi)**  
**Faculty Details**



Title	Dr.	First Name	Nidhi	Last Name	Verma	Photograph
Designation	<b>Assistant Professor</b>					
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Researcher ID	rid97407					
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Educational Qualifications						
Degree	Institution				Year	
PhD	Jawaharlal Nehru University, New Delhi India				2020	
MSc	H.N.B. Garhwal University, Uttarakhand, India				2013	
BSc	B.R. Ambedkar Agra University, Uttar Pradesh				2011	
Career Profile						
<ol style="list-style-type: none"><li><b>1. Postdoctoral Research Fellow</b> at Department of Microbiology and Molecular Genetics, McGovern Medical School, UTHealth, Houston, Texas, USA.</li><li><b>2. Research Associate</b> at International Center for genetic Engineering and Biotechnology (2021-2022)</li><li><b>3. Postdoctoral Research Fellow</b> at Transcription Regulation Group, International Center for Genetic Engineering and Biotechnology. (<b>DST-SERB-National Post-Doctoral Fellow-2022</b>).</li><li><b>4. DBT-MK Bhan Young Research Fellow-2023</b></li></ol>						
Administrative Assignments						
<ol style="list-style-type: none"><li>1. Elected Student Representative in JNUSU, Jawaharlal Nehru University-2015</li><li>2. Student Faculty Committee (SFC) Member at School of Life Sciences, Jawaharlal Nehru University-2016</li></ol>						

<ol style="list-style-type: none"> <li>3. Student Faculty Committee (SFC) Member at School of Life Sciences, Jawaharlal Nehru University-2017</li> <li>4. Member in Function Committee at Ram Lal Anand College, University of Delhi-2023</li> <li>5. Member in North East Students Welfare Committee at Ram Lal Anand College, University of Delhi-2023</li> <li>6. Member in Sangoshthi Committee at Ram Lal Anand College, University of Delhi-2023</li> <li>7. Nodal officer at RLAC, Viksit Bharat @2047: Voice of Youth Campaign January, 2024 onwards.</li> <li>8. Member in College event management and Function committee at Ram Lal Anand College, University of Delhi-2024</li> <li>9. Co-convener in Prospectus cum Annual Report Committee at Ram Lal Anand College, University of Delhi-2024</li> <li>10. Member in Research and IPR cell at Ram Lal Anand College, University of Delhi-2024.</li> <li>11. Member in NAAC Steering committee 2<sup>nd</sup> cycle, Ram Lal Anand College, University of Delhi-2024-25.</li> <li>12. Co-convener, Centre of Cyber-Security and Forensics (CoCF) at Ram Lal Anand College, University of Delhi.</li> </ol>
<b>Areas of Interest / Specialization</b>
Plant-microbe interaction, RNA biology, Mycology, Fungal genetics, Biochemistry, Molecular Microbiology, Industrial Microbiology.
<b>Subjects Taught</b>
Basic Microbiology Techniques, Biochemistry of Nucleic Acids and Proteins, Bacterial Diversity and Systematics, Genomic DNA isolation and characterization, Basic Analytical Techniques, Biotechniques and Instrumentation, Microbial Biotechnology, Industrial microbiology, Agricultural Microbiology, Microbes in Bioremediation and Petroleum Industry.
<b>Research Guidance</b>
<ol style="list-style-type: none"> <li>1. Co-supervised MSc. Dissertation on “Cloning and heterologous expression of a Gene of Interest (GoI) in E. coli” towards the partial fulfilment for the award of the degree of M.Sc. Biotechnology Submitted at Shri Mata Vaishno Devi University, Jammu. Student Name: Aakash Kumar (21MBT034) from January 2023-May 2023.</li> <li>2. Co-supervised Summer Internship in Scientific Writing and Communication, Writing book chapters and Review articles at Department of Microbiology, RLAC from 12 June, 2023-20 July, 2023.</li> </ol>
<b>Publications Profile (Books/Chapters/Research articles, etc.) (Last 10 Years)</b>
<ol style="list-style-type: none"> <li>1. Jogawat, A., Vadassery, J., Verma, N., Oelmüller, R., Dua, M., Nevo, E. and Johri, A.K., 2016. PiHOG1, a stress regulator MAP kinase from the root endophyte fungus Piriformospora indica, confers salinity stress tolerance in rice plants. <i>Scientific reports</i>, 6(1), p.36765.</li> <li>2. Tayal, P., Raj, S., Sharma, E., Kumar, M., Dayaman, V., Verma, N., Jogawat, A., Dua, M., Kapoor, R. and Johri, A.K., 2017. A Botrytis cinerea KLP-7 kinesin acts as a virulence determinant during plant infection. <i>Scientific Reports</i>, 7(1), p.10664.</li> <li>3. Narayan, O.P., Verma, N., Singh, A.K., Oelmüller, R., Kumar, M., Prasad, D., Kapoor, R., Dua, M. and Johri, A.K., 2017. Antioxidant enzymes in chickpea colonized by Piriformospora indica participate in defense against the pathogen Botrytis cinerea. <i>Scientific reports</i>, 7(1), p.13553.</li> <li>4. Jogawat, A., Bisht, D., Verma, N., Dua, M. and Johri, A.K., 2019. The Root Endomutualist Piriformospora indica: A Promising Bio-tool for Improving Crops under Salinity Stress. <i>Molecular Plant Abiotic Stress: Biology and Biotechnology</i>, pp.269-281.</li> </ol>

5. Prasad, D., **Verma, N.**, Bakshi, M., Narayan, O.P., Singh, A.K., Dua, M. and Johri, A.K., 2019. Functional characterization of a magnesium transporter of root endophytic fungus *Piriformospora indica*. *Frontiers in Microbiology*, 9, p.3231.
6. Narayan, O.P., **Verma, N.**, Jogawat, A., Dua, M. and Johri, A.K., 2021. Sulfur transfer from the endophytic fungus *Serendipita indica* improves maize growth and requires the sulfate transporter SiSulT. *The Plant Cell*, 33(4), pp.1268-1285.
7. Liu, Y., Li, C., Gupta, M., **Verma, N.**, Johri, A.K., Stroud, R.M. and Voth, G.A., 2021. Key computational findings reveal proton transfer as driving the functional cycle in the phosphate transporter PiPT. *Proceedings of the National Academy of Sciences*, 118(25), p.e2101932118.
8. **Verma, N.**, Narayan, O.P., Prasad, D., Jogawat, A., Panwar, S.L., Dua, M. and Johri, A.K., 2022. Functional characterization of a high-affinity iron transporter (PiFTR) from the endophytic fungus *Piriformospora indica* and its role in plant growth and development. *Environmental Microbiology*, 24(2), pp.689-706.
9. **Verma, N.**, Singh, Y., Patra, A. and Singh, T., 2022. Role of Non-Coding RNAs in Plant Nutrition Through Mycorrhizal Interactions.
10. Haque, M.M.U., Anwar, M.S., Malik, M.Z., Singh, R.B., **Verma, N.** and Sharma, S.K., 2022. A systems biology approach to understand the role of TDP-43 in amyotrophic lateral sclerosis. In *TDP-43 and Neurodegeneration* (pp. 135-151). Academic Press.
11. Narayan, O. P., Yadav, B., Verma, N., Dua, M. and Johri, A. K. (2023). Maize Seedlings Colonization with *Serendipita indica* and Its Colonization Efficiency Analysis. *Bio-protocol* 13(20): e4855.
12. Shelja Agarwal, Sneha Priya, Nidhi Verma, Vandana Gupta (2024). Microbial Secondary Metabolites and Recent Advances in Nanomicrotechnology.
13. Hardik Singh, Shreyas Bhat, Sakshi Verma, Nidhi Verma, Vandana Gupta (2024) Secondary Metabolites from Microorganisms: A Boost to the Textile Industry.
14. Patra Sandeep, Verma Nidhi, Sneha Priya, Gupta Aishani, Gupta Vandana (2024). Microbes as Biocontrol Agents for Sustainable Development
15. Kapoor Shreya, Verma Nidhi, Charak Harsh, Dutta Kaushiki, Gupta Aishani, Gupta Vandana (2024). Flexible fungal materials (FFMs): An industrial perspective.
16. De Lay NR, Verma N, Sinha D, Garrett A, Osterberg MK, Porter D, et al. (2024) The five homologous CiaR-controlled Ccn sRNAs of *Streptococcus pneumoniae* modulate Zn-resistance. *PLoS Pathog* 20(10): e1012165. <https://doi.org/10.1371/journal.ppat.1012165>

#### Conference Organization/ Presentations

1. Association of Microbiologists of India (AMI)-2015
2. Society of Biological Chemists (SBC)-2017
3. Science Technology Research and Entrepreneurship Enhancement (STREE 2020).
4. Attended 'Vigyanika - Science Literature Festival, IISF 2023' at India International Science Festival (IISF) organised by DBT-THSTI-RCB Campus, Faridabad, Haryana on 18th January 2024 as Invited speaker and session moderator.
5. Cultural policy chaupal: Culture for development - Viksit Bharat by Honourable Meenakshi Lekhi on 23rd Feb 2024 in collaboration with Hindi Rajbhasha Committee and Viksit Bharat Ambassador Club, RLAC as Nodal Officer Viksit Bharat
6. Awareness Seminar on "celebrating developments in science for Viksit Bharat." By Prof. Rajeev Kaul, Prof. Neel Sarovar Bhavesh, Prof. Chander Kumar Singh on 27th Feb 2024

in collaboration with Viksit Bharat Ambassador Club, IQAC and Mikrobiologika as Nodal Officer Viksit Bharat

7. University level program “Nari Shakti Conclave- Viksit Bharat Ambassador Club” organized by Delhi University and Viksit Bharat Ambassador Club at Indoor Stadium, Delhi University on 7th March, 2024, Attended with 46 students as Nodal officer Viksit Bharat.
8. Science outreach program to Pattiya village cluster on “sookhmajeevon se parichay” for high school students in village as Organising member for outreach activity, Mikrobiologika society, RLAC including 23 UG students with 4 teaching faculty of Microbiology department from 25<sup>th</sup>-28<sup>th</sup> April, 2024.
9. Organized Lecture on “Learnings from Kalam’s life” and open house quiz on 15<sup>th</sup> October, 2024 in collaboration with Indraprastha Vigyan Bharati at Ram Lal Anand College.
10. Organized documentary screening on “Life and Works of Dr. G.N. Ramachandran” and crossword-quest on Indian Nobel Prizes on 14<sup>th</sup> November 2024 in collaboration with Indraprastha Vigyan Bharati at Ram Lal Anand College.
11. Organized and Attended ‘Vigyanika - Science Literature Festival, IISF 2024’ at India International Science Festival (IISF) organised by CSIR-IIT-Guwahati, Assam from 30<sup>th</sup> November- 1<sup>st</sup> December 2024 as Invited speaker and session moderator.

#### Research Projects (Major Grants/Research Collaboration)

1. **Adhoc Research Scheme- ICMR (Indian Council of Medical Research), Fund: Rs. 28.90 Lakhs, March 2022-March 2024, (Co-PI).** *"Evolutionary Genome Complexity of SARS-COV-2 Virus and search for therapeutic Translational Medicine"*
2. “Stochastic framework and its application to study the dynamics of epidemic diseases: simulation, analysis and strategies to control the spread of virus outbreak (COVID-19) in India” **(Co-PI) Funded by ICSSR, Rs. 7 Lakhs.**
3. **SERB-NPDF project entitled "High-throughput Screening and Characterization of Small Molecule Inhibitors of Micro RNAs (miR-21 and miR-155) and their Use in Cancer Therapeutics."**(February, 2022- May, 2023)- **13 Lakh** (Revised Budget).
4. **DBT-MK Bhan Project** (2023) on DEAD Box Helicase.
5. **GISE Hub (IIT-B) Project (September, 2023- September, 2025)-** "Traditional knowledge hub for indigenous communities in India" **(Co-PI) -24.9 Lakhs.**
6. **RLA-CRG third call project-2024 (July 2024-ongoing)** in Department of Microbiology, Ram Lal Anand College. **(Co-PI)-1 Lakh**
7. **RLA-CRG third call project-2024 (July 2024-ongoing)** in Department of Microbiology and Department of Geology, Ram Lal Anand College. **(Co-PI)-1 Lakh**
8. **ICMR-Small Research Grant Project-2024** to conduct research at Ram Lal Anand College. **(PI) -95 Lakh**

#### Awards and Distinctions

1. Academic Excellence Scholarship 2011-2012
2. Academic Excellence Scholarship 2012-2013
3. Qualified GATE (Biotechnology)-2013
4. Qualified GATE (Biotechnology)-2014

5. 86<sup>th</sup> Society of Biological Chemists (SBC-2017) **Women Young Scientist** (PhD. Scholar) Award-2017.
6. **Outstanding Abstract Award** (OAA) in ASM-Microbe 2019, Organized by American Society for Microbiology, USA
7. **International Travel Award** (2019) from Council of Scientific and Industrial Research (CSIR), Govt. of India.
8. **International Travel Award** (2019) from DBT, Govt. of India.
9. **Organizer's Best Poster Award (Agricultural Microbial Technology)** (2019) from Association of Microbiologists of India (AMI), Organized by Central University of Haryana (CUH), Mahendragarh, Haryana, India.

#### Association With Professional Bodies

1. American Society of Microbiology: Membership
2. Guest Reviewer in Frontiers in Ecology and Evolution
3. Guest Reviewer in Frontiers in Microbiology
4. Certified Radioactive material handler by University RSO
5. Topic Editor in Frontiers in Medical Technology: Nanomaterials and Small Molecule-Enabled Precision Therapeutics, Biosensor and Diagnostics.
6. Media and Networking co-coordinator in Indraprastha Vigyan Bharati

#### Conference attended:

1. International symposium on “ Current Advances in Radiology, Stem Cells and Cancer Research, February 19-21, 2015, organized by School of Life Sciences, Jawaharlal Nehru University, New Delhi, India.
2. 56<sup>th</sup> Annual Conference of Association of Microbiologists of India (AMI-2015) & International Symposium on “Emerging Discoveries in Microbiology” 7-10 December, 2015, Organized by School of Life Sciences, Jawaharlal Nehru University, New Delhi, India.
3. 86<sup>th</sup> Annual Conference of Society of Biological Chemists “SBC-2017” 16-19 November, 2017, Organized by School of Life Sciences, Jawaharlal Nehru University, New Delhi, India.
4. Poster in Bi-annual Conference on “Yeast Biology” jointly organized by School of Life Sciences, Jawaharlal Nehru University, New Delhi, India and Amity University, Gurgaon, India.
5. Poster in National Science Day, held on February 28, 2015 at Jawaharlal Nehru University, New Delhi, India.
6. Poster in Focused meeting 2018: MICROBES UNDERPINNING AGRICULTURE from 1-2 October 2018, Cork, Ireland, organized by Society of Microbiology, UK.
7. Poster in ASM Microbe-2019, organized by American Society for Microbiology, USA at San Francisco, CA, USA from 20-24 June, 2019.
8. Poster in 60<sup>th</sup> Annual conference of Association of Microbiologists of India (AMI)-2019 at Central University of Haryana, India from 15-18<sup>th</sup> November, 2019.
9. “Global Bio-India 2023” at Bharat Mandapam, Pragati Maidan, New Delhi from 4-6 December 2023.

### **FDP/FIP/Professional training/Workshop attended:**

1. Faculty Induction/Orientation Programme for “Faculty in Universities/Colleges/Institutes of Higher Education” from 23 May – 21 June, 2023.
2. Hands on training at Bioage Mohali to learn handling and operation of fermentor from 24th-25th July 2023
3. Hands-on workshop on “Metagenomic sequencing and Analysis: 16S and WGS” organised by IQAC and Mikrobiologika, Department of Microbiology, RLAC and Biokart India Ltd. On 10<sup>th</sup> October 2023.
4. Teachers Summit on “NEP2020: Role of a Teacher” organised by Vidya Bharati Uchcha Shiksha Sansthan held at AICTE auditorium, New Delhi on 4<sup>th</sup> November, 2023.
5. Faculty Development Program (FDP) on “Basic Skills in Genomics”, 4-11 August, 2023.
6. Workshop on Cybersafety and Awareness for Women organised by Women Welfare Advisory Committee, Ram Lal Anand College on 2 November, 2023.
7. Training course on “Groundwater management & Rainwater Harvesting to Recharge Groundwater” held on 29<sup>th</sup> November, 2023 at RLAC.
8. Inaugural Ceremony of Faculty Induction Programme "NEP2020: Pedagogical Imperatives of Higher Education" on 1 December' 2023 in Sports Complex, University of Delhi.
9. NEP 2020 Orientation & Sensitization Programme Organized by Centre for Professional Development in Higher Education (UGC-MMTTC), University of Delhi from 19th December 2023 to 29th December 2023.
10. Six Weeks International Online Faculty Development Programme on “Bioanalytical Techniques (Part 1) – Microscopy, Chromatography and Centrifugation (Phase I)” organized by the Department of Microbiology, Sacred Heart College (Autonomous), Tirupattur, Tamil Nadu, India in association with Biotechnology Society of Nepal (BSN) and Laboratory of Chemical and Biological Analysis (LAQB), Western Rio Janeiro State University (UEZO), Rio de Janeiro, Brazil from 03rd January 2024 –14th February 2024.
11. Enabling Technology Training Workshop on “Gene Enrichment and Biological Pathway Analysis” on 2nd Feb, 2024 organised by School of Computational & Integrative Sciences, JNU

### **Other Activities**

1. **15 days Hands-on training** in “Techniques in Molecular Biology” from Institute of Biotechnology & Research Center (IBRC), Agra, Uttar Pradesh, India (15-29 July, 2009).
2. **15 days training** in Tuberculosis and Leprosy Microbiology from National Jalma Institute for Leprosy & Other Mycobacterial Diseases (ICMR), Agra, Uttar Pradesh, India (28 July-13 Aug., 2010).
3. Second position in school level poster presentation in “Biotechnology Awareness Week” December 7-11, 2010, organized by GLA group of institution, Mathura, Uttar Pradesh, India.
4. **B. Sc. Dissertation:** “Identification and culture of methanogens” from Central Institute of Research on Goats (ICAR), Farah, Mathura, Uttar Pradesh, India (2011).
5. **M. Sc. Dissertation:** “Microbial assay of vitamin B12 by using *E. coli* mutant in finished nutraceutical” from Zeon Life Sciences, Paonta sahib, Himachal Pradesh, India (2013).
6. **One week hands-on training** “Microbial Techniques and Applications in Pharma Industry, organized by Dolphin (PG) Institute of Biomedical and Natural Sciences in association with Drug Manufacturer Association of Uttarakhand, India (2-8 Nov., 2012).

7. **One week training** "Radioactive isotope handling and safety measures certification course", From Jawaharlal Nehru University, New Delhi, India. (November, 2016).
8. **Initial Laboratory and Blood-borne Pathogen Safety Training** conducted by University of Texas Health Science Center at Houston, Texas, USA. (October, 2020).
9. Second position in school level Quiz Competition in "Science Awareness Week" February 22-28, 2009, organized by GLA group of institution, Mathura, Uttar Pradesh, India.
10. Student representative in JNUSU (2015-16) from School of Life Sciences, Jawaharlal Nehru University, New Delhi, India.
11. Organized National seminar "BIOSPARKS '2017" at School of Life Sciences, Jawaharlal Nehru University, New Delhi, India.
12. Winner of "Agar art competition" 2020 organized by McGovern Medical School, UThealth, Houston, Texas, USA.
13. Winner of "Logo design competition for MMG/MID virtual retreat-2021" organized by McGovern Medical School, UThealth, Houston, Texas, USA.
14. Winner of Lawa Race organized at International Center for Genetic Engineering and Biotechnology-2023



**Signature of Faculty Member**