

## ***CURRICULUM VITAE***



**Name:** Prof. Praveen Kumar Verma, Ph.D., FNASc.

**Designation:** Professor

Fellow of The National Academy of Sciences, India

Professor, Cell and Molecular Biology, School of Life Sciences, Jawaharlal Nehru University, New Delhi-110067, India

Concurrent Faculty (Ayurveda Biology): SSIS, Jawaharlal Nehru University, New Delhi

Ex Director, Research & Development, Jawaharlal Nehru University, New Delhi

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**Education** (Graduation onwards)

<b>Sl No.</b>	<b>Institution Place</b>	<b>Degree Awarded</b>	<b>Year</b>	<b>Field of Study</b>
1.	University of Bihar, Muzaffarpur	B.Sc. (Hons.)	1988	Botany (Hons.), Zoology, Chemistry
2.	School of Life Sciences, Jawaharlal Nehru University, New Delhi	Post-graduation	1991	Life Sciences
3.	School of Life Sciences, Jawaharlal Nehru University, New Delhi	Ph.D.	1997	Plant-Molecular Biology, Molecular Genetics

### **Position and Employment:**

Sl No.	Institution Place	Position	From (Date)	To (date)
1	School of Life Sciences, Jawaharlal Nehru University, New Delhi	Professor	December 7, 2020	
2	National Institute of Plant Genome Research, New Delhi	Staff Scientist VI	15 April 2016	December 7, 2020
3	National Institute of Plant Genome Research, New Delhi	Staff Scientist V	15 April 2012	14 April 2016
4	National Institute of Plant Genome Research, New Delhi	Staff Scientist IV	15 April 2008	14 April 2012
5	National Institute of Plant Genome Research, New Delhi	Staff Scientist III	15 April 2003	14 April 2008
6	National Institute of Plant Genome Research, New Delhi	Staff Scientist II	15 April 1998	14 April 2003

### **Publications (Peer Review Journals)**

#### **Peered Reviewed Publications:**

1. Singh, S.K., Shree, A., Verma, S., Singh, K., Kumar, K., Srivastava, V., Singh, R., Saxena, S., Singh, A.P., Pandey, A., **Verma, P.K.** (2023) The nuclear effector ArPEC25 from the necrotrophic fungus *Ascochyta rabiei* targets the chickpea transcription factor Ca $\beta$ LIM1a and negatively modulates lignin biosynthesis, increasing host susceptibility. **The Plant Cell** Volume 35, Issue 3, 1134-1159 <https://doi.org/10.1093/plcell/koac372>
2. Thakur K, Shree A, Verma PK. (2023) Unraveling pathogen deceptive disguise: from modules to mimicry. *Trends Plant Sci.* 2023 (in press), <https://doi.org/10.1016/j.tplants.2023.11.020>
3. Singh R, Kumar K, Puryannur S, **Verma PK.** Genomics-assisted genetics of complex regions from chickpea chromosome 4 reveals two candidate genes for *Ascochyta* blight resistance. **Plant Sci.** 2023 Jun 29; 334: 111781. <https://doi.org/10.1016/j.plantsci.2023.111781>

4. Sahu, A., Singh, R., **Verma, P.K.** Plant *BBR/BPC* transcription factors: unlocking multilayered regulation in development, stress and immunity. *Planta* 258, 31 (2023). <https://doi.org/10.1007/s00425-023-04188-y>
5. Pasari, N., Gazara, R.K., Singh, J., **Verma, P.K.** (2023) Genome-Wide Identification of *SWEET* Genes in *Cicer arietinum* and Modulation of Its Expression in Endophytic Interactions with *Serendipita indica*. *J Plant Growth Regulation* (in press) <https://doi.org/10.1007/s00344-023-10971-8>
6. Kaladhar, V.C., Singh, Y., Nair, A.M., Kumar, K., Singh, A.K., **Verma, P.K.** (2023) A small cysteine-rich fungal effector, BsCE66 is essential for the virulence of *Bipolaris sorokiniana* on wheat plants. *Fungal Gen. and Biol.* 166, 103798, <https://doi.org/10.1016/j.fgb.2023.103798>
7. Singh, Y., **Verma P.K.** (2022) Guiding the guards: MPK3/6–VLN3 module regulating stomatal defense. *Trends in Plant Sciences* 26(6):626-32 DOI: <https://doi.org/10.1016/j.tplants.2022.02.007>
8. Singh, R., Kumar, K., Purayannur, S., Chen, W., **Verma, P.K.** (2022) *Ascochyta rabiei*: A threat to global chickpea production. *Molecular Plant Pathology*, 23:1241–1261, DOI: <https://doi.org/10.1111/mpp.13235>
9. Saxena, S., Pal, L., Naik, J., Singh, Y, **Verma, P.K.**, Chattopadhyay D and Pandey A (2023) The R2R3-MYB-SG7 transcription factor CaMYB39 orchestrates surface phenylpropanoid metabolism and pathogen resistance in chickpea. *New Phytologist* 238: 2, 798-816 <https://doi.org/10.1111/nph.18758>
10. Singh, J., **Verma, P.K.** (2023) Role of Nod factor receptors and its allies involved in nitrogen fixation. *Planta*, 257, 54. <https://doi.org/10.1007/s00425-023-04090-7>
11. Chaliha, C., Srivastava, R., Kalita, E., Sahoo, L., **Verma P.K.** (2023) Rapid and precise detection of cryptic tea pathogen *Exobasidium vexans*: RealAmp validation of LAMP approach. *World J Microbiol Biotechnology* 39, 52 <https://doi.org/10.1007/s11274-022-03506-y>
12. Singh, R. Dwivedi A, Singh Y, Kumar, K. Ranjan A, **Verma, PK** (2022) Global transcriptome and co-expression analysis reveal robust host defense pathway reprogramming and identify key regulators of early phases of *Cicer-Ascochyta* interactions. *Molecular Plant Microbe Interactions* 35:11, 1034–1047, <https://doi.org/10.1094/MPMI-06-22-0134-R>
13. Singh, Y., Sharma, R., Mishra, M., **Verma, P.K.\*** and Saxena, A.K.\* (2022), Crystal structure of ArOYE6 reveals a novel C-terminal helical extension and mechanistic insights into the distinct class III OYEs from pathogenic fungi. *FEBS Journal*, 289: 5531-5550. <https://doi.org/10.1111/febs.16445> (\*Corresponding authors) **Editor's Choice Article**
14. Singh R, Pandey A, **Verma, PK** (2022) Comparative genomic analysis of GARP transcription factor family in legumes and identification of stress-responsive candidate genes. *Journal Plant Growth Regulation* <https://doi.org/10.1007/s00344-022-10746-7>
15. Singh, R., Kumar, K., Bharadwaj, C., **Verma, P.K.** (2022) Broadening the horizon of crop research: A decade of advancements in plant molecular genetics to divulge phenotype governing genes. *Planta* 255, 46 (2022). DOI <https://doi.org/10.1007/s00425-022-03827-0>

16. Singh, J, **Verma PK** (2022) Genome-wide identification, expression, and characterization of CaLysM-RLKs in chickpea root nodule symbiosis. **Environmental and Experimental Botany**, 104999, DOI: <https://doi.org/10.1016/j.envexpbot.2022.104999>
17. Bhagat, N., Magotra, S., Gupta, R., Sharma, S., Verma, S., **Verma, P.K.**, Ali, T., Shree, A., Vakhlu, J. (2022) Invasion and Colonization of Pathogenic *Fusarium oxysporum* R1 in *Crocus sativus* L. during Corm Rot Disease Progression. **Journal of Fungi** 8, 1246. <https://doi.org/10.3390/jof8121246>
18. Srivastava, V., Chowdhary, A.A., **Verma, P.K.**, Mehrotra, S., Mishra, S., (2022) Hydrogen sulfide-mediated mitigation and its integrated signaling crosstalk during salinity stress. **Physiologia Plantarum**. 174 (1):e13633. DOI: [10.1111/ppl.13633](https://doi.org/10.1111/ppl.13633)
19. Sinha, M., Shree, A., Singh, K., Kumar, K., Singh, S.K., Kumar, V., **Verma, P.K.** (2021), Modulation of fungal virulence through CRZ1 regulated F-BAR-dependent actin remodeling and endocytosis in chickpea infecting phytopathogen *Ascochyta rabiei*. **PLOS Genetics** 17(5): e1009137. <https://doi.org/10.1371/journal.pgen.1009137>
20. Chaliha, C., Kaladhar, V.C., Doley, R., **Verma, P.K.**, Kumar, A., Kalita, E. (2021) Bipartite molecular approach for species delimitation and resolving cryptic speciation of *Exobasidium vexans* within the *Exobasidium* genus. **Computational Biology and Chemistry** 92, 107496, <https://doi.org/10.1016/j.compbiolchem.2021.107496>
21. Singh, J., **Verma, P.K.** (2021) NSP1 allies with GSK3 to inhibit nodule symbiosis. **Trends in Plant Sciences**, Volume 26, Issue 10, 999 – 1001 DOI: <https://doi.org/10.1016/j.tplants.2021.07.001>
22. Singh, K., Aggarwal, R., **Verma, P.K.**, Verma, S., Channappa, M., Choudhary, M., Kulshreshtha, D., Rawat, K. (2021). Functional analysis of SCD1 gene involved in pathogenicity of spot blotch disease of wheat causing fungus *Bipolaris sorokiniana*. **Indian Phytopathology**. 75, 57–66 (2022). <https://doi.org/10.1007/s42360-021-00436-x>
23. Singh, Y., Nair, A.M., **Verma, P.K.** (2021) Surviving the odds: from perception to survival of fungal phytopathogens under host-generated oxidative burst, **Plant Communications**, <https://doi.org/10.1016/j.xplc.2021.100142>
24. Magotra, S., Bhagat, N., Ambardar, S., Ali, T., Hurek, B.R., Hurek, T., **Verma, P.K.\*** and Vakhlu, J.\* (2021) Field evaluation of PGP Bacillus sp. strain D5 native to *Crocus sativus*, in traditional and non-traditional areas, and mining of PGP genes from its genome. **Scientific Reports** 11: 5454. <https://doi.org/10.1038/s41598-021-84585-z> (\*corresponding authors)
25. Sharma, S., Singh, Y., **Verma, P.K.**, Vakhlu, J. (2021) Establishment of *Agrobacterium rhizogenes*- mediated hairy root transformation of *Crocus sativus* L. **3 Biotech** 11:82 <https://doi.org/10.1007/s13205-020-02626-2>
26. Randhawa, A., Pasari, N., Sinha, T., Gupta, M., Nair, A.M., Ogunyewo, O.A., Verma, S., **Verma P.K.**, Yazdani, S.S. (2021) Blocking drug efflux mechanisms facilitate genome engineering process in hypercellulolytic fungus, *Penicillium funiculosum* NCIM1228 **Biotechnology for Biofuels** 14, 31 <https://doi.org/10.1186/s13068-021-01883-4>
27. Ogunyewo, O.A., Randhawa, A., Gupta, M., Kaladhar, V.C., **Verma, P.K.**, Yazdani SS (2020) Synergistic Action of a Lytic Polysaccharide Monooxygenase and a Cellobiohydrolase from *Penicillium funiculosum* in Cellulose Saccharification Under High Substrate Loading. **Applied and Environmental Microbiology** DOI: <https://doi.org/10.1128/AEM.01769-20>
28. Chaliha, C., Kalita, E., **Verma, P.K.** (2019) Optimizing in vitro culture conditions for the biotrophic fungi *Exobasidium vexans* through response surface methodology, **Indian Journal of Microbiology**, DOI <https://doi.org/10.1007/s12088-019-00846-6>

29. Kumar, K., Purayannur, S., Kaladhar, V.C., Parida, S.K. and **Verma, P.K.** (2018) mQTL-seq and classical mapping implicates the role of an *AT-HOOK MOTIF CONTAINING NUCLEAR LOCALIZED (AHL)* family gene in *Ascochyta* blight resistance of chickpea. **Plant Cell & Environment** 41:2128-2140. <https://doi.org/10.1111/pce.13177>
30. Kumar, M., Verma, S., Gazara, R.K., Kumar, M., Pandey, A. and **Verma, P.K.\***, Thakur IS\* (2018) Genomic and proteomic analysis of lignin degrading and polyhydroxyalkanoate accumulating  $\beta$ -proteobacterium *Pandoraea* sp. ISTKB. **Biotechnology for Biofuels** 11:154 <https://doi.org/10.1186/s13068-018-1148-2> (\*corresponding authors)
31. Momota, P., Sahoo, D., **Verma, P.K.**, Verma, S., Kalita, M.C., Indira, S. 2018. Draft Genome Sequence of *Bacillus altitudinis* Lc5, a Biocontrol and Plant Growth-Promoting Endophyte Strain Isolated from Indigenous Black Rice of Manipur. **Microbiology Genome Announcements**. Vol 6, Issue 26, 1-2. 2169-8287 <https://doi.org/10.1128/genomeA.00601-18>
32. Verma, S., Gazara, R.K., **Verma, P.K.** (2017) Transcription Factor Repertoire of Necrotrophic Fungal Phytopathogen *Ascochyta rabiei*: Predominance of MYB Transcription Factors as Potential Regulators of Secretome. **Frontiers in Plant Sciences** 8:1037. <https://doi.org/10.3389/fpls.2017.01037>
33. Srivastava, V., **Verma, P.K.** (2017). The plant LIM proteins: Unlocking the hidden attractions. **Planta** 246(3):365-375. <https://doi.org/10.1007/s00425-017-2715-7>
34. Purayannur, S., Kumar, K., Kaladhar, V.C., **Verma, P.K.** (2017) Phylogenomic analysis of MKKs and MAPKs from 16 legumes and detection of interacting pairs in chickpea divulge MAPK signalling modules. **Scientific Reports** 7:5026. <https://doi.org/10.1038/s41598-017-04913-0>
35. Mallik, B., Dwivedi, M.K., Mushtaq, Z., Kumari, M., **Verma, P.K.**, and Kumar V (2017) Regulation of neuromuscular junction organization by Rab2 and its effector ICA69 in *Drosophila*. **Development** 144:2032-2044. <https://doi.org/10.1242/dev.145920>
36. Kumar, M., Singhal, A., **Verma, P.K.** and Thakur, I.S. (2017) Production and characterization of polyhydroxyalkanoate from lignin derivatives by *Pandoraea* sp. ISTKB. **ACS Omega** 2: 9156-9163. <https://doi.org/10.1021/acsomega.7b01615>
37. Verma, S., Gazara, R.K., Nizam, S., Parween, S., Chattopadhyay, D., **Verma, P.K.** (2016) Draft genome sequencing and secretome analysis of fungal phytopathogen *Ascochyta rabiei* provides insight into the necrotrophic effector repertoire. **Scientific Reports**, 6:24638. <https://doi.org/10.1038/srep24638>
38. Kumar, K., Srivastava, V., Purayannur, S., Kaladhar, V.C., Cheruvu, P.J. and **Verma, P.K.** (2016) WRKY domain-encoding genes of a crop legume chickpea (*Cicer arietinum*): comparative analysis with *Medicago truncatula* WRKY family and characterization of group-III gene(s). **DNA Research** 23(3):225-239. <https://doi.org/10.1093/dnares/dsw010>
39. Kumar M, Gazara RK, Verma S, Kumar M, **Verma PK\***, Thakur IS\* (2016) Genome Sequence of *Pandoraea* sp. ISTKB, a lignin degrading  $\beta$ -proteobacterium, isolated from the rhizospheric soil. **Genome Announcements** 4(6):e01240-16 (\*Corresponding authors) <https://doi.org/10.1128/genomea.01240-16>
40. Kumar, M., Gazara, R.K., Verma S, Kumar M, **Verma PK\***, Thakur IS\* (2016) Genome sequence of carbon dioxide sequestering *Serratia* sp. ISTD04 isolated from marble mining rocks. **Genome Announcements** 4(5):e01141-16. (\*Corresponding authors) <https://doi.org/10.1128/genomea.01141-16>
41. Jaijyan, D.K., **Verma, P.K.**, Singh, A.P. (2016) A novel FIKK kinase regulates the development of mosquito and liver stages of the malaria **Scientific Reports** 6:39285. <https://doi.org/10.1016/j.molbiopara.2009.01.003>

42. Trivedi, D.K., Srivastava, A., **Verma, P.K.**, Tuteja, N. and Gill, S.S. (2016) *Piriformospora indica*: a friend in need is a friend in deed. **Journal of Botanical Sciences** 5:16-19.
43. Chandra, A., **Verma, P.K.**, Islam, M.N., Grisham, M.P., Jain, R., Sharma, A., Roopendra, K., Singh, K., Singh, P., Verma, I. and Solomon, S. (2015) Expression analysis of genes associated with sucrose accumulation in sugarcane (*Saccharum* spp. hybrids) varieties differing in content and time of peak sucrose storage. **Plant Biology** 17:608-617. <https://doi.org/10.1111/plb.12276>
44. Srivastava, S., Bharti, R.K., **Verma, P.K.** and Thakur, I.S. (2015) Cloning and expression of gamma carbonic anhydrase from *Serratia* sp. ISTD04 for sequestration of carbon dioxide and formation of calcite. **Bioresource Technology** 188:209-213. <https://doi.org/10.1016/j.biortech.2015.01.108>
45. Srivastava, V. and **Verma, P.K.** (2015) Genome wide identification of LIM genes in *Cicer arietinum* and response of Ca-2LIMs in development, hormone and pathogenic stress. **PLoS ONE** 10(9):e0138719. <https://doi.org/10.1371/journal.pone.0138719>
46. Nizam, S., Gazara, R.K., Verma, S., Singh, K. and **Verma, P.K.** (2014) Comparative structural modeling of six old yellow enzymes (OYEs) from the necrotrophic fungus *Ascochyta rabiei*: Insight into novel OYE classes with differences in cofactor binding, organization of active site residues and stereopreferences. **PLoS ONE** 9(4):e95989. <https://doi.org/10.1371/journal.pone.0095989>
47. Hasan, S., Singh, K., Danisuddin, M., **Verma, P.K.**, Khan, A.U. (2014) Inhibition of major virulence pathways of *Streptococcus mutans* by Quercitrin and Deoxynojirimycin: a synergistic approach of infection control. **PLoS ONE** 9(3):e91736. <https://doi.org/10.1371/journal.pone.0091736>
48. Nizam, S., Verma, S., Borah, N.N., Gazara, R.K., **Verma, P.K.** (2014) Comprehensive genome-wide analysis reveals different classes of enigmatic old yellow enzyme in fungi. **Scientific Reports** 4:4013. <https://doi.org/10.1038/srep04013>
49. Kumar, K., Yadav, S., Purayannur, S., **Verma, P.K.** (2013) An alternative approach in Gateway cloning when the bacterial antibiotic selection cassettes of the entry clone and destination vector are the same. **Molecular Biotechnology** 54(2):133-140. <https://doi.org/10.1007/s12033-012-9549-0>
50. Purwar, S., Sundaram, S., **Verma, P.K.**, Srivastava, S. and Kumar, A. (2012) A physiologically regulated multidomain cystatin of wheat shows stage-dependent immunity against Karnal bunt (*Tilletia indica*). **Applied Biochemistry Biotechnology** 168(8):2344-2357. <https://doi.org/10.1007/s12010-012-9941-z>
51. Hasan, S., Danishuddin, M., Adil, M., Singh, K., **Verma, P.K.**, Khan, A.U. (2012) Efficacy of *E. officinalis* on the cariogenic properties of *Streptococcus mutans*: a novel and alternative approach to suppress quorum sensing mechanism. **PLoS ONE** 7(7):e40319. <https://doi.org/10.1371/journal.pone.0040319>
52. Yadav, S., Kushwaha, H.R., Kumar, K., **Verma, P.K.** (2012) Comparative structural modelling of a Monothiol GRX from chickpea: Insight in Iron-Sulfur Cluster assembly. **International Journal of Biological Macromolecules** 51:266–273. <https://doi.org/10.1016/j.ijbiomac.2012.05.014>
53. Khan, R., Adil, M., Danishuddin, **Verma, P.K.**, Khan, A.U. (2012) *In vitro* and *in vivo* inhibition of *Streptococcus mutans* by *Trachyspermum ammi* seeds: An approach of alternative medicine. **Phytomedicine** 19(8-9):747-755. <https://doi.org/10.1016/j.phymed.2012.04.004>
54. Singh, K., Nizam, S., Sinha, M. and **Verma, P.K.** (2012) Comparative transcriptome analysis of the necrotrophic fungus *Ascochyta rabiei* during oxidative stress: insight for fungal survival in the host plant. **PLoS ONE** 7(3):e33128. <https://doi.org/10.1371/journal.pone.0033128>

55. Nizam, S., Verma, S., Singh, K., Aggarwal, R., Srivastava, K.D. and **Verma, P.K** (2012) High reliability transformation of the wheat pathogen *Bipolaris sorokiniana* using *Agrobacterium tumefaciens*. **Journal of Microbiological Methods** 88(3):386-392. <https://doi.org/10.1016/j.mimet.2012.01.004>
56. Jaiswal, P., Cheruku, J.R., Kumar, K., Yadav, S., Singh, A., Kumari, P., Dube, S.C., Upadhyaya, K.C. and **Verma, P.K.** (2012) Differential transcript accumulation in chickpea during early phases of compatible interaction with a necrotrophic fungus *Ascochyta rabiei*. **Molecular Biology Reports** 39:4635- 4646. <https://doi.org/10.1007/s11033-011-1255-7>
57. Islam, M.N., Nizam, S. and **Verma, P.K.** (2012) A highly efficient *Agrobacterium* mediated transformation system of chickpea wilt pathogen *Fusarium oxysporum* f. sp. *ciceri* using DsRed-Express to follow root colonization. **Microbiological Research** 167(6):332-338. <https://doi.org/10.1016/j.micres.2012.02.001>
58. Kushwaha, H.R., Kumar, G., **Verma, P.K.**, Singla-Pareek, S.L. and Pareek, A. (2011) Analysis of a salinity induced BjsOS3 protein from Brassica indicate it to be structurally and functionally related to its ortholog from Arabidopsis. **Plant Physiology and Biochemistry** 49:996-1004. <https://doi.org/10.1016/j.plaphy.2011.03.013>
59. Nizam, S., Singh, K. and **Verma, P.K.** (2010) Expression of the fluorescent proteins DsRed and EGFP to visualize early events of colonization of the chickpea blight fungus *Ascochyta rabiei*. **Current Genetics** 56(4):391-399. <https://doi.org/10.1007/s00294-010-0305-3>
60. Singh, A., Singh, I.K. and **Verma, P.K.** (2008) Differential Transcript Accumulation in *Cicer arietinum* L. in Response to a Chewing Insect *Helicoverpa armigera* and Defense Regulators Correlate with Reduced Insect Performance **Journal of Experimental Botany** 59(9):2379-2392. <https://doi.org/10.1093/jxb/ern111>
61. Anjanasree, K.N., **Verma, P.K.** and Bansal, K.C. (2005) Differential expression of tomato ACC oxidase gene family in relation to fruit ripening. **Current Science** 89(8):1394-1399. <https://www.jstor.org/stable/24110845>
62. Boominathan, P., Shukla, R., Kumar, A., Manna, D., Negi, D., **Verma, P.K.** and Chattopadhyay D (2004) Long term transcript accumulation during the development of dehydration adaptation in *Cicer arietinum* L. **Plant Physiology** 135(3):1608-1620. <https://doi.org/10.1104/pp.104.043141>
63. Thakur, I.S., **Verma, P.K.** and Upadhyaya, K.C. (2002) Molecular cloning and characterization of pentachlorophenol-degrading monooxygenase genes of *Pseudomonas* sp. from the chemostat. **Biochemical and Biophysical Research Communications** 290:770-774. <https://doi.org/10.1006/bbrc.2001.6239>
64. Thakur, I.S., **Verma, P.K.** and Upadhyaya, K.C. (2001) Involvement of plasmid in degradation of pentachlorophenol by *Pseudomonas* sp. from a chemostat. **Biochemical and Biophysical Research Communications** 286:109-113. <https://doi.org/10.1006/bbrc.2001.5340>
65. **Verma, P.K.** and Upadhyaya, K.C. (1998) A multiplex RT-PCR assay for analysis of relative transcript levels of different members of multigene families: Application to Arabidopsis calmodulin gene family. **Biochemistry & Molecular Biology International** 46(4):699 DOI: [10.1080/15216549800204232](https://doi.org/10.1080/15216549800204232)

#### Books:

- Co-authored a text book on “**Biotechnology**” for M.Sc. students with Dr. Pranav Kumar and Dr. Usha Mina, Pathfinder Publications, New Delhi (6<sup>th</sup> edition, 2022)

#### Chapters in books:

1. Saxesena, R., Singh, S.K. & **Verma, P.K.** (2023). Transcription factors: master regulators of disease resistance in crop plants. In: Srivastava, V., Mishra, S., Mehrotra, S, Upadhyay, S.K. (eds.) **Plant Transcription Factors**, <https://doi.org/10.1016/B978-0-323-90613-5.00009-1>
2. Singh, J., Kumar, K., **Verma, P.K.** (2020). Functional Characterization of Genes Involved in Legume Nodulation Using Hairy Root Cultures. In: Srivastava, V., Mehrotra, S., Mishra, S. (eds) **Hairy Root Cultures Based Applications**. Rhizosphere Biology. Springer, Singapore. [https://doi.org/10.1007/978-981-15-4055-4\\_14](https://doi.org/10.1007/978-981-15-4055-4_14)
3. Dwivedi, A., Kumar, K., **Verma, P.K.** (2019) Constructing Synthetic Pathways in Plants: Strategies and Tools. In: Singh SP, Pandey A, Du G, Kumar S. (eds.), **Current Developments in Biotechnology and Bioengineering**. Elsevier B.V., pp. 77-113. <https://doi.org/10.1016/B978-0-444-64085-7.00004-6>
4. Purayannur, S., Kumar, K., **Verma, P.K.** (2017) Genetic engineering to improve biotic stress tolerance in plants. In: Abdin, M.Z., Khantwal, U., Kamaluddin, M., Ali, A. (eds.), **Plant Biotechnology: Principles and applications**. [https://doi.org/10.1007/978-981-10-2961-5\\_8](https://doi.org/10.1007/978-981-10-2961-5_8)
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### Research Guidance:

Ph.D degree (awarded): 19

No of Ph.D.: Students in laboratory: 5

No. of Post-doc: 1

**Research Support**  
**Ongoing Research Projects: 2**

S. No.	Title of project	Funding agency	Sanctioned budget	Project duration (Dates)		Working as PI/Co-PI/Co-I
				From	to	
<b>Principal Investigator: Prof. Praveen K. Verma</b>						
1.	Structure-guided identification and designing of novel, potential anti-fungal agents against ArOYE6 to control the fungal disease in crops.	DST-SERB	52,88,888	11 <sup>th</sup> July 2023	July 2026	PI
2.	Divulge key secreted virulence effectors of wheat spot blotch fungal pathogen <i>Bipolaris sorokiniana</i> and identify their host targets for disease management in wheat.	DST-SERB	50,57,888	29 <sup>th</sup> July 2021	July 2024	PI

Completed Research Projects:

S. No.	Title of project	Sanctioned budget	Duration (Dates)	Date of actual completion	Whether the project completed & completion report accepted by DBT
			From /To		
1.	Challenge Programme on Chickpea Functional Genomics, under sub-project, Understanding genetic and molecular basis of Ascochyta blight resistance in chickpea	100.857 lakh	23 <sup>rd</sup> November, 2015 5 years	22 <sup>nd</sup> Nov, 2020	Completed, Report sent.
2.	Identification and characterization of effectors from necrotrophic blight fungus	58.612 lakh	20 <sup>th</sup> June, 2014 3 years 6 months	20 <sup>th</sup> Dec, 2017	Completed, Report sent.

	<i>Ascochyta rabiei</i> and their targets from the chickpea.				
3	Towards identification, isolation and characterization of <i>Exobasidium vexens</i> and their pathogenic determinants/effectors from blister blight infested tea plantation of Assam and development of a future roadmap for effective management practices	37.81 lakh	8 <sup>th</sup> April, 2015, 3 years	7 <sup>th</sup> April, 2018	Completed, Report sent.
4	Next Generation Challenge Programme on Chickpea Genomics Sub-Project 2B: Analysis of chickpea response to <i>Ascochyta</i> infection and generation of ORFeome for target genes.	39.9 lakh	22 September, 2009, five years	21 September, 2014	Completed, Report sent.
5.	Isolation and functional characterization of genes from necrotrophic chickpea-blight fungus <i>Ascochyta rabiei</i> which involved in pathogenesis during compatible interactions	31.13 lakh	14 <sup>th</sup> July 2008 4 years	13 <sup>th</sup> July, 2012	Completed, Report sent.