




## Curriculum - Vitae

Title	Dr.	First Name	Suman	Last Name	Lakhanpaul	Photograph
Designation		Professor				
Address		EG-119,UGF, Inder Puri, New Delhi-110012				
Phone No Office		011 2700 6900				
Residence		011-25833341				
		9868375756				
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Email		Sumanlp2001@yahoo.com				
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Educational Qualifications						
Degree	Institution				Year	
Ph.D.	Delhi University				1989	
M.Phil. / M.Tech.	Delhi University				1983	
PG	Delhi University				1981	
UG	Delhi University				1979	
Any other qualification						
Career Profile						
Delhi University, Botany Department	Professor	2006-Till date	Teaching and Research			
Delhi University, Botany Department	Reader	2002-2005	Teaching and research			
NRC on DNA Fingerprinting, NBPGR, Pusa Campus, New Delhi-110012	Senior Scientist	1998-2002	Teaching and research			
National Bureau of Plant Genetic Resources, Pusa Campus, New Delhi-110012	Scientist ( Senior scale)	1992-1998	Research			
National Bureau of Plant Genetic Resources, Pusa	Scientist S-1	1987-1992	Research			

Campus, New Delhi-110012

#### Administrative Assignments

1. Chairman, Meritorius Award committee of Science Faculty, Governing body member and Chairperson of a DU college,
2. Coordinator, Student Teacher Interaction committee of the Department
3. Member of several Committees of the Department such as Purchase Committee, Antirragging, Student Orientation and Mentoring, Committee of Courses, Syllabus revision for M.Sc and Ph.D. etc,
4. VC nominee for selection committees of research Projects and DRC of other Department

#### Areas of Interest / Specialization

Plant molecular genetics, Crop Genetics, Molecular analysis of biological diversity, Multipartner ( plant-insect-endosymbionts) interactions

#### Subjects Taught during the last Semester

S.No.	Subject	Days	Time
1	Genetics and Cytogenetics	(i) Wednesday (Theory and Practical) (ii) Thursday (Theory and Practical)	(i) Wednesday 1.30-5.45 pm (ii) Thursday: 8.45 am – 1pm
2,	Plant Developmental Biology	Monday ( Theory)	3.30pm -5.30 pm
3.	Genetics, Genomics and Molecular Breeding	Wednesday (Theory and Practical)	Theory 8.45 AM-1pm Practical 1.30pm- 5.45 pm
4.	Dissertation	Thursday Friday Saturday	Thursday 2.15 PM-5.00 PM Friday 2.15 PM-5.00 PM Saturday 8.45 AM-5.00 PM
5.	M.Phil./Ph.D. Coursework RM1: Research Methodology EL06:Genetic markers and mapping	Wednesday (Theory and Practical)	Theory 11.30-1.30 PM Practical 2.30-5.30 PM

Genetics, Molecular Genetics, Plant Anatomy, Genetics and Biotechnology of Crop plants, Biotechnology in management of Plant Genetic Resources

#### Research Guidance

List against each head

1. Supervision of awarded Doctoral Thesis- 11
2. Supervision of Doctoral Thesis, under progress-4
3. Supervision of awarded M.Phil dissertations- 9
4. Supervision of M.Phil dissertations, under progress-nil

## Publications Profile

List against each head(If applicable) (as Illustrated with examples)

1. Books/Monographs (Authored/Edited)
2. Research papers published in Refereed/Peer Reviewed Journals

### RESEARCH PAPERS PUBLISHED IN REFEREED/PEER REVIEWED JOURNALS

#### ( Last 10 years only)

1. Verma, N., Pathak, N., Singh, A., Bhat, K.V. and Lakhanpaul S. (2020) Investigations on diverse sesame (*S. indicum* L.) germplasm and its wild allies reveal wide variation in antioxidant potential. *Physiology and Molecular Biology of Plants* 26(4):697-704 DOI: 10.1007/s12298-020-00784-41.
2. Mann, N., Uniyal, P.L. and Lakhanpaul, S. (2020) Incidence of *in situ* pollen germination in three species of *Viola L.* of Uttarakhand. *Natl. Acad. Sci. Lett.* <https://doi.org/10.1007/s40009-020-00917-z>.
3. Singh A, Lakhanpaul S. Detection, characterization and evolutionary aspects of S54LP of SP (SAP54 Like Protein of Sesame Phyllody): a phytoplasma effector molecule associated with phyllody development in sesame (*Sesamum indicum* L.). *Physiol Mol Biol Plants*. 2020 Mar;26(3):445-458. doi: 10.1007/s12298-020-00764-8.
4. Bhardwaj, D., Sahoo, R.K., Naqvi, A.R. Lakhanpaul, S. Tuteja, N. (2020).. Pea G $\beta$  subunit of G proteins has a role in nitric oxide-induced stomatal closure in response to heat and drought stress. *Protoplasma* **257**, 1639–1654 <https://doi.org/10.1007/s00709-020-01529-6>
5. Kashshik , S., [Amit Vashishtha](#), [S. Shweta](#) [K. K. Sharma](#) and [Suman Lakhanpaul](#) (2020) Essential amino acid profiling of the four lac hosts belonging to genus *Flemingia*: its implications on lac productivity [Physiology and Molecular Biology of Plants](#) 26:s1867–1874.
6. Marhold et al ...Arora J.,.... Lakhanpaul S. .... Pandit M.K. (2020) International Association for Plant Taxonomy (IAPT) Chromosome data 33/1 Taxon
7. Singh A., Verma P. and Lakhanpaul S. (2020) Exploring the methylation status of selected flowering genes in healthy and phyllody infected sesame plants. *Phytopathogenic Mollicutes* 10

(1) 36-42.

8. Malik S., Kasana S., and Lakhanpaul S. (2020) Chloroplast DNA marker as a tool to study the molecular phylogeny of Indian *Barleria* L. (Acanthaceae). *Medicinal Plants* 12 (4): 609-614.

9. Singh A., Verma P. and Lakhanpaul, S. (2019) Phytoplasma effector molecules and their structural aspects: A review. *Phytopathogenic Mollicutes* 9 (2): 241-251 DOI : [10.5958/2249-4677.2019.00121.X](https://doi.org/10.5958/2249-4677.2019.00121.X)

10. Remya, P., Bindhani, N., Purru, S., Lakhanpaul, S. Bhat, K. V. (2020) Adaptive evolution and response to Phytoplasma: A genome-wide study of TCP transcription factors in *Sesamum indicum* L. *Annals of Applied Biology* 176 (1):75-95 . <https://doi.org/10.1111/aab.12561>

11. Kumar S., Arora J., Singh V., Seth N. and Lakhanpaul S. (2019) A baseline study of an abandoned mine site in Purnapani, Odisha: a step towards ecological restoration. *Vegetos* 32(3): 275–280 DOI 10.1007/s42535-019-00047-y,

12. Singh A. and Lakhanpaul, S. (2019) Genome-wide analysis of putative G-quadruplex sequences (PGQSs) in Onion yellows phytoplasma (strain OY-M) – an emerging plant pathogenic bacteria. *Indian Journal of Microbiology* DOI: 10.1007/s12088-019-00831-z

13. Kaushik, S., Sharma, K.K., Ramani, R. and Lakhanpaul S. (2019) Detection of Wolbachia Phage (WO) in Indian Lac Insect [*Kerria lacca* (Kerr.)] and Its Implications. *Indian Journal of Microbiology* 59 (2): 237-240.

14. V. Singh, S. Kumar and S. Lakhanpaul (2017) Differential distribution of phytoplasma during phyllody progression in oilseed crop sesame (*Sesamum indicum* L.) under field conditions - An important consideration for effective sampling of diseased tissue. *Crop Protection* DOI: 10.1016/j.cropro.2017.01.01

15. Vibhuti Singh, Sachin Kumar, N.S. Bharat Reddy, M K Naik, K. V. Bhat, Suman

- Lakhanpaul (2016) Devastation of sesame (*Sesamum indicum* L.) crops in different agroclimatic zones of India by genetically diverse subgroups of phytoplasma. *Crop Protection* 86: 24-30.
16. Chakraborty, A., Mitra, J. Bhattacharyya, J. Sikdar, N., Chakraborty, S., Kumar S., Lakhanpaul, S and Sen S.K. (2015) Transgenic expression of an unedited mitochondrial orfB gene product from wild abortive (WA) cytoplasm of rice (*Oryza sativa* L.) generates male sterility in fertile rice lines. *Planta* 241(6):1463-1479 doi: 10.1007/s00425-015-2269-5
17. Vashishtha, A., Jehan T. and Lakhanpaul, S. (2013) Genetic diversity and population structure of *Butea monosperma* (Lam.) Taub.-a potential medicinal legume tree. *Physiol. Mol. Biol. Plants* DOI 10.1007/s/2298-013-0170
18. Kumar S., V. Singh, and S. Lakhanpaul (2012) A candidatus *Phytoplasma asteris* isolate associated with bud proliferation disease of cow pea in India. *New Disease Reports* 25. doi.org/10.5197/j.2044-
19. Bhardwaj D., Lakhanpaul, S. and Tuteja, N. (2012) A wide range of interacting partners of pea G $\beta$  subunit suggests its multiple functions in cell signalling. *Plant Physiology and Biochemistry* 58:1-5.
20. Sandeep Kaushik, Anand Kumar Pushker, Suman Lakhanpaul, Kewal Krishan Sharma, Rangnathan Ramani (2012) Investigations on some of the important host plants of *Kerria lacca* with reference to phloem distance. *Eurasian Journal of Biosciences* 6:32-38.
21. Ahmad, A., Kaushik S., Ramamurthy, V.V., Lakhanpaul, S., Ramani, R., Sharma, K.K. and Vidyarthi, A.S. (2012) Mouthparts and stylet penetration of the lac insect *Kerria lacca* (Kerr.) (Hemiptera: Tachardiidae). *Arthropd Structure and Development* 41:435-441.
22. Kumar S., V. Singh, and S. Lakhanpaul (2012) A 'Candidatus *Phytoplasma aurantifolia*' strain associated with little leaf of *Mirabilis jalapa* and *Chrysanthemum* sp. *Australasian Journal of Plant Pathology* 7:71-73.
23. Kumar S., V. Singh, and S. Lakhanpaul (2012) First report of 'Candidatus *Phytoplasma asteris*' associated with yellowing of *Barleria prionitis* in India. *New disease reports*

(<http://dx.doi.org/10.5197/j.2044-0588.2012.025.008>).

24. Kumar S., V. Singh, and S. Lakhanpaul (2012) Detection and characterization of a phytoplasma associated with witches'-broom disease of *Salvadora persica* in India. Journal of General Plant Pathology DOI:10.1007/s 10327-012-0381.
20. Kumar S., V. Singh, and S. Lakhanpaul (2011) Molecular evaluation and phylogeny of a phytoplasma associated with bunchy top disease in its new host Okra (*Abelmoschus esculentus*) in India reveals an evolving lineage within the 16SrI group. European Journal of Plant Pathology, DOI 10.1007/s10658-011-9910-3.
21. Vashishtha, A., Sharma, K.K. and Lakhanpaul, S. (2011) Co-existence, phylogeny and putative role of *Wolabchia* and yeast like Symbiont (YLS) in *Kerria lacca*. Current Microbiology 63 (2): 206-212.
22. Kumar S., V. Singh, and S. Lakhanpaul (2011) Co-occurrence of phytoplasma and spiroplasma in sesame plants affected with yellowing disease. Phytopathogenic Mollicutes, 1, 47-49.
23. Pushker A.K., S.Kaushik, S.Lakhanpaul, K.K. Sharma, R. Ramani (2011). Preliminary phytochemical investigation on the bark of some of the important host plants of *Kerria lacca* – The Indian lac insect. Botany Research International 4(3); 48-51.
24. Sharma, P., Nain V. Lakhanpaul, S. Kumar P.A. (2011). Binding of *Bacillus thuringiensis* Cry1A toxin with brush border membrane vesicles of maize stem borer (*Chilo partellus* Swinhoe). J. of Invertebrate Pathology 106(2): 333-335.
25. Sharma P., Nain V., Kumar P. A. Lakhanpaul, S (2010). Synergistic activity between *Bacillus thuringiensis* Cry1Ab and Cry1Ac toxins against maize stem borer (*Chilo partellus* Swinhoe). Letters in Applied Microbiology DOI 10.1111/i1472-765.
26. Kumar, S., Singh V., Lakhanpaul, S (2010). First report of *Crotolaria spectabilis* fasciation associated with '*Candidatus phytoplasma asteris*' in India. Plant Disease 94: 1265 (Cover

article).

27. Kumar S., Singh V., Lakhanpaul, S (2010). First report of '*Candidatus Phytoplasma asteris*' associated with green ear disease of bajra in India. *Plant Pathology* 22:27.

28. Vir, R., Bhat K.V., Lakhanpaul, S. (2010). Genetic characterization and species relationships among selected Asiatic *Vigna* species. *Genetic Resources and Crop Evolution* DOI 10.1007/s10722.010. 9550z

29. Kumar, S., Singh V., Lakhanpaul, S (2010) First report of cotton and luffa little leaf associated with *Candidatus Phytoplasma* (16sR1) in India. *Australasian J. Plant Pathology* 5: 117-119.

30. Vir, R, K V Bhat, and Lakhanpaul, S. (2010) Genetic characterization and species relationship among selected Asiatic *Vigna* species. *Genetic Resources and Crop Evolution* 57: 1091-1107.

#### OTHER PUBLICATIONS (EDITED WORKS/BOOKS REVIEWS/FESTSCHRIFT VOLUMES ETC.)

##### EDITED WORKS

##### Chapters in Books

- 1) **Lakhanpaul, S.** 1993. Genetic stability under long-term storage conditions. In: Rana, R.S., Saxena, R.K., Saxena, S. and Mittar, V. (Eds) *Conservation and Management of Plant Genetic resources*. NBPGR, ICAR, New Delhi.
- 2) **Lakhanpaul, S.** 1995. Random amplified polymorphic DNA and its utilization. In Rana, R.S., Chandel, K.P.S., Mandal, B.B., Bhat, S.R.; Karihaloo, J.L.; Bhat, K.V. and Pandey, R. (Eds) *Plant Germplasm Conservation: Biotechnological Approaches*, NBPGR, New Delhi, India.
- 3) **Lakhanpaul, S.** 1995. Random amplified polymorphic DNA analysis. In Rana, R.S., Chandel, K.P.S., Mandal, B.B., Bhat, S.R.; Karihaloo, J.L.; Bhat, K.V. and Pandey, R. (Eds) *Plant Germplasm Conservation: Biotechnological Approaches*, NBPGR, New Delhi, India . pp. 253-259.
- 4) Bhat, K.V. and **Lakhanpaul, S.** 1995. Study of isozyme polymorphism. In Rana, R.S.,

Chandel, K.P.S., Mandal, B.B., Bhat, S.R.; Karihaloo, J.L.; Bhat, K.V. and Pandey, R. (Eds) Plant Germplasm Conservation: Biotechnological Approaches, NBPGR, New Delhi, India.

- 5) Bhat KV, **Lakhanpaul S.**, Chandel KPS 1996 Biochemical and Molecular Techniques for Characterization of Plant Genetic Resources. Manual for the training course sponsored by USAID and ICAR, March 12-22, 1996, National Bureau of Plant Genetic Resources, New Delhi-110 012, India, pp. 108.
- 6) Bhat, K.V., **Lakhanpaul, S.**, Rana, M.K. and Chadha, S. 1998. DNA fingerprinting and varietal identification. Souvenir X<sup>th</sup> National Seed Seminar on Seed Technology Developments - Challenges for 21st century. Indian Society of Seed Technology. New Delhi. pp29-34.
- 7) Karihaloo, J. L., K. V. Bhat, **S. Lakhanpaul**, T. Mohapatra and G. Randhawa. 2001. Molecular characterization of germplasm. *In* Dhillon, B. S., K. S. Varaprasad, K. Srinivasan, M. Singh, S. Archak, U. Srivastava and G. D. Sharma. ***National Bureau of Plant Genetic Resources: A Compendium of Achievements***. National Bureau of Plant Genetic Resources, New Delhi, pp 166-182.
- 8) Karihaloo, J.L. , Archak, S. and **Lakhanpaul, S.** 2002. Application of molecular markers in assessing genetic diversity of tropical fruit crops species. *In* Conservation and Cryopreservation of tropical fruit species (Eds) Chaudhury, R., Pandey, R., Malik, S.K. and Bhagmal. IPGRI Office for South Asia, New Delhi/ NBPGR, New Delhi, pp 233-247.
- 9) Duhoon S.S., Sharma S.M, Bhat K.V. and **Lakhanpaul, S.** 2004. Sesame. *In* Plant genetic Resources: Oilseed and Cash Crops. ( Eds) Dhillon, B.S., Tyagi, R.K., Saxena S. and Agarwal, A. Narosa Pub. House, Delhi.
- 10) Duhoon S.S., Sharma S.M, Bhat K.V. and **Lakhanpaul, S.** 2004. Niger. *In* Plant genetic Resources: Oilseed and Cash Crops. ( Eds) Dhillon, B.S., Tyagi, R.K., Saxena S. and Agarwal, A. Narosa Pub. House, Delhi.
- 11) Khanna, Ruchi Vir, Bhat, K.V., **Lakhanpaul, S.** and Bhat K.V. 2008 Molecular genetic differentiation and relationships among selected Asiatic Vigna species. *In*. Food Legumes for Nutritional Security and Sustainable Agriculture (ed.) M.C. Kharagwal.



Proceedings of the Fourth International Food Legume Research Conference (IFLRC-IV) held at New Delhi, India, October 18-22, 2005.pp 604-616.

- 12) **Lakhanpaul, S.**, Singh V., Kumar S. Bhardwaj, D. and Bhat K.V. 2011 “Incorporating abiotic stress resistance in Sesame- the Queen of oilseed crops” In **Improving Crop Resistance to Abiotic stress-Omics Approaches**. (Ed.Tuteja et al .) WILEY-VCH Verlag , Germany.
- 13) Bhardwaj, D., **Lakhanpaul, S.** and Tuteja, N. 2013. Can G-Proteins be the key proteins for overcoming environmental stresses and increasing crop yields in plants? In: N. Tuteja, & S.S. Gill (Eds) Plant Acclimation to Environmental Stresses XVIII. Springer.
- 14) **Suman Lakhanpaul**, Vibhuti Singh, Sachin Kumar and Deepak Bhardwaj and Kangila Venkataramana Bhat ( 2012) Overcoming the abiotic stresses in sesame (*Sesamum indicum* L.) – the queen of oil seed crops. In: Improving Crop Resistance to Abiotic Stress (Tuteja et al. Eds), Vol. II, Wiley-VCH Verlag, Weinheim. (ISBN- 978-3-527-32840-6) pg 1251-1283.
- 15) Vibhuti Singh, Sachin Kumar, Amrita Singh, Niti Pathak, Kangila Venkataramana Bhat and **Suman Lakhanpaul** (2016) Unlocking the potential of genetic resources for improvement of sesame (*Sesamum indicum* L.) – the current scenario In: Gene Pool Diversity and Crop Improvement, Volume 1. ( Rajpal et al., Eds) Springer ( ISBN 2353-474X).
- 16) Ruchi Vir, **Suman Lakhanpaul**, Sonal Malik, Sooraj Umdale and Kangila Venkataramana Bhat (2016) Utilization of germplasm for genetic improvement of mung bean ( *Vigna radiate* ( L.) Wilczek: The constraints and the opportunities. In: Gene Pool Diversity and Crop Improvement, Volume 1. ( Rajpal et al., Eds) Springer ( ISBN 2353-474X)

1. Other publications (Edited works, Book reviews, Festschrift volumes, etc.)

Conference Organization/ Presentations (in the last three years)

List against each head (If applicable)

*Participation as Paper/Poster Presenter ( Last five years only)*

1. Bhardwaj D, Lakhanpaul S and Tuteja N. (2012) wide range of interacting partners of *Pisum sativum*  $\beta$  subunit suggests its significant multirole in signal transduction pathway. presented at International Conference on Plant Biotechnology for food security: New Frontiers held at NASC complex, Pusa Campus, during February 21-24, 2012. .
2. Kumar S., Singh V. and Lakhanpaul S. (2014) Putative roles of selected OY-M phytoplasma effector proteins in plant hosts: A bioinformatics approach. Presented at International Symposium on Plant Signaling and Behavior, March 7-10, Department of Botany, University of Delhi, Delhi.
3. Bhardwaj D., Lakhanpaul S., Sharma S., Narayanan L. and Tuteja N. (2014) *Pisum sativum* G-protein beta subunit interacts with small pathogenesis-related cysteine rich protein to regulate stomatal functions. Presented at International Symposium on Plant Signaling and Behavior, March 7-10, Department of Botany, University of Delhi, Delhi.
4. Lakhanpaul, S., Singh, V. and Kumar, S. (2014) Understanding plant development from a new teacher-Phytoplasma: A bacterial pathogen that causes genetic reprogramming in plants. Presented at Botany 2014: New Frontiers in Botany, July 22-30, 2014, Boise, Idaho, USA
5. Mann N., Uniyal, P.L. and Lakhanpaul, S. (2014) Study on floral biology and phylogenetic analysis of *Viola* L. (Violaceae) presented at III Global Congress “ Plant Reproductive biology, conservation and crop improvement held during December 15-17th, 2014, Agra, India.
6. Lakhanpaul, S., Singh, V. and Kumar, S. (2014) Understanding plant development from a new teacher-Phytoplasma: A bacterial pathogen that causes genetic reprogramming in plants. Presented at Botany 2014: New Frontiers in Botany, July 22-30, 2014, Boise, Idaho, USA.

7. Malik S. and S. Lakhanpaul (2016) The need for resolving taxonomic ambiguities and the study of genetic diversity in *Barleria* - an underexploited medicinally important genus. Presented at National conference on Agrotechnology, Commerce and Sustainable use of medicinal and aromatic plants held during February 6-7, 2016 at NAASC, IARI, New Delhi.
8. A. Singh, R. Khongbantabam, V. Singh, S. Kumar and S. Lakhanpaul (2016) Diverse phytoplasma strain are associated with sesame (*Sesamum indicum*) phyllody in India. Presented at IPS 6<sup>th</sup> International Conference on Plant Pathogens and People, ICAR, New Delhi, held during 23-27 February, 2016.
9. S. Kumar, V. Singh and S. Lakhanpaul (2016) Differential ability of two nested-PCR primers (R16F2/R2n & fu5/rU3) for phytoplasma detection - A critical assessment. Presented at IPS 6<sup>th</sup> International Conference on Plant Pathogens and People, ICAR, New Delhi, held during 23-27 February, 2016.
10. Lakhanpaul, S. (2016) Unraveling Dawkins extended phenotype- Molecular mechanism for Phytoplasma induced developmental alterations in host plants. Invited talk IPS 6<sup>th</sup> International Conference on Plant Pathogens and People, ICAR, New Delhi, held during 23-27 February, 2016.
11. Vibhuti Singh, Sachin Kumar, Suman Lakhanpaul (2017) Investigations on the fastidious endophytic bacterial flora of *Catharanthus roseus* L. using PPLO culture method presented at International Conference and Outreach Program on “Environment & Ecology: Sustainability and challenges” 4– 6 January, 2017 held at Delhi University.
12. Sandeep Kaushik, Amit Vashishtha and Suman Lakhanpaul (2017) MLST profiling of *Wolbachia* associated with *Kerria lacca* (Kerr.) presented at International Conference and Outreach Program on “Environment & Ecology: Sustainability and challenges” 4 – 6 January, 2017 held at Delhi University.
13. Amrita Singh, Neetu Tyagi, KV Bhat and Suman Lakhanpaul (2017) Occurrence and distribution of G-quadruplexes in the genomes of four phytoplasmas In INSCR International Conference – 2017 (IIC-2017) Theme: “Role of Microbe-Plant-Animal Interactions in Human Health” 26th -28th September, 2017, Delhi University.

14. Delivered invited talk entitled “ Delineating the phytoplasma associated retrograde metamorphosis in host plants with special emphasis on Sesame ( *Sesamum indicum* L.) phyllody” in International Conference on Human, animal and plant Mycoplasmas Dec 3-4<sup>th</sup>, 2019, Pune, NCMR, NCCS,Pune-411 021.

Research Projects (Major Grants/Research Collaboration)				
Sl. No.	Title of Project	Funding Agency	Duration	No. of Scientists/ Associates
1.	Studies on the genetic stability of cryopreserved germless under the Megaproject on “In vitro conservation and cryopreservation of important agri-horticultural crops”	Department of Biotechnology (DBT), Govt. of India	1987-1996	Seven
2.	Technology Development for DNA fingerprinting of pulses, oilseeds and fibre crops	Indian Council of Agricultural Research (ICAR), Govt. of India	1996 – 2002	Three
3.	Development of molecular markers for assessment of genetic diversity studies in sesame	Department of Science and Technology (DST), Govt. of India	1997-2000	One
4.	Validation of core collection of sesame using molecular markers	National Agricultural Technology Program (NATP)/ICAR	1999 – 2002	Three
5.	Genetic enhancement of crop species with particular reference to sesame and mungbean	NATP/ICAR	1999 – 2002	Five
6.	Biochemical and molecular characterization of the Lac insect host relationship	Department of Biotechnology (DBT), Govt. of India	2003 -2007	Two
7.	Program support on Restoration Ecology	Department of Biotechnology (DBT),	2005-2012	Four

		Govt. of India		
8.	To understand the nature of diversity in lac insect and the nature of insect X host plant interaction	World Bank through National Agricultural Innovative Project (Indian Council for Agricultural Research)	2009- 2013	Four
9	Relationship of Phytoplasma with its host plant and insect vectors	National Fund for Research in Basic , Strategic and Frontier Research, ICAR	2013- 2016	Two
10.	Detection and characterization of Phytoplasma affecting major floricultural crops of India	Extra mural Research Funding, Indian Council of Agricultural Research	2016-2017	Two
11.	Characterization and Epidemiology of Phytoplasmas Infecting Major Horticultural Crops	Extra mural Research Funding, Indian Council of Agricultural Research	2016-2017	Two
12.	‘Delineating the effector biology of phytoplasma affecting selected crop taxa in India with special emphasis on sesame ( <i>Sesamum indicum</i> L.)’	National Agricultural Science Fund	2019-2022	Two

#### Awards and Distinctions

Awarded NSTS (National Science Talent Search Scholar) Fellowship and availed the fellowship for the entire education period i.e. upto Ph.D.

Secured 1st Position in college in B.Sc.

Secured 2<sup>nd</sup> position at All India level in ARS (Agricultural Research Services) Examination (1985) held by UPSC (Union Public Service Commission), Govt. of India in the specialization- Genetics and Cytogenetics.

Judged as Excellent Teacher and nominated for the Award of Best Teacher in IARI, (Deemed University)

Association With Professional Bodies

**Membership or fellowship of professional /Academic bodies, Societies etc.**

Indian Society of Plant Genetic Resources (Founder Member)

Indian Society of Genetics and Plant Breeding

Society for Plant Biochemistry and Biotechnology (Founder Member)

International society of Plant Morphologists

Indian Society for Root Crops

Indian Association of Mycoplasmologists (Secretary, w.e.f, Dec 3, 2019)

Delhi University Botanical society

Society for Ecological research and Natural Resource Management (Vice- President)

Member, Special Committee for drug standardization of Central Council for Research in Homoeopathy (CCRH) w.e.f 31.1.19

Punarnava, AADOB ( Alumni Association of Department of Botany, Delhi University ( Secretary)

Other Activities

1. Resource person in the Training program on "***In vitro* and Cryopreservation Technology for Gene bank**" organized by INDO-USAID during 10-29, October. 1994.
2. Resource person in the "**Regional Training Course on Seed Genebank Management**" sponsored jointly by the International Plant Genetic Resource Institute (IPGRI), Indian Council of Agricultural Research (ICAR), the Food and Agriculture Organization (FAO), the International Rice Research Institute (IRRI) and International Crop research Institute for Semi- Arid Tropics (ICRISAT) and organized by IPGRI in collaboration with NBPGR during 8-22 December, 1996.
3. Organized and conducted training course on "**Biochemical and Molecular Techniques for Characterization of Plant Genetic Resources**", sponsored by USAID and ICAR, March 12-22, 1996, National Bureau of Plant Genetic Resources, New Delhi-110 012, India.
4. Organized and conducted training programme "**Molecular Marker Techniques for DNA fingerprinting**" at NRC on DNA Fingerprinting, NBPGR, Nov 22-Dec. 18, 1999.
5. Resource person for "Molecular genetic tools for analysis of genetic diversity in plant genetic resources." **International training program on "*In vitro* conservation and cryopreservation of plant germplasm, Principles and Practices**". Sponsored by IPGRI, ICAR and FAO. October 12-25, 2000. NBPGR, New Delhi.
6. Resource person for "**National symposium on Intellectual Property Rights and Indian Germplasm Resources: Emerging Challenges**" organized by Department of Biosciences, Jamia Millia Islamia, New Delhi, October 20-21, 2000.
7. Resource person for the "**Biotechnology & Intellectual Property Rights (IPR)**" in the Orientation cum Workshop on Plant Genetic Resources Management under the HRD component of NATP – Sustainable Management of Plant Biodiversity, NBPGR, Feb 27.2.2001 to 1.3.2001.
8. External faculty "**Molecular Genetics of Plant Biodiversity Assessment**" in the Workshop on Plant Biosystematics organized at Centre for Environmental Management of Degraded Ecosystems, School of Environment Studies. Delhi University, March. 2001.
9. Resource person "**Molecular Markers in characterization of Plant Genetic Resources**" in the Trainers Training on PGR management under the HRD component of NATP – Sustainable Management of Plant Biodiversity, NBPGR, March 2-21, 2001.
10. Co-course coordinator for training programme on "**PCR based techniques for plant DNA fingerprinting**" at NRC on DNA Fingerprinting, New Delhi.
11. Panelist and resource person in the "**Trainers Training program under HRD component of NATP subproject on sustainable Management of Plant Biodiversity**" held from 8-25 January, 2002 for the lecture "Importance of DNA fingerprinting in changing IPR scenario".
12. Resource person for **Workshop on Biosystematics and conservation of plant diversity** held at CEMDE, Delhi University from January 15-24<sup>th</sup>. 2003.
13. Resource person for **Workshop on Biosystematics and conservation of plant diversity** held at CEMDE, Delhi University from March 1-10, 2004.

14. Resource person for **Workshop on Biosystematics** held at CEMDE, Delhi University from November 28<sup>th</sup> to December 13<sup>th</sup>, January 15-24<sup>th</sup>. 2004.
15. Member organizing Committee of **4<sup>th</sup> International Food Legume Research Conference ( IFLRC-IV)** held in Indian Agricultural Research Institute ( IARI) from October 18-22,2005.
16. Resource person for **Workshop on Taxonomy and Bioprospecting** held at CEMDE, Delhi University from January 28<sup>th</sup> to February 6<sup>th</sup>, 2008.
17. Resource person for **Workshop on Taxonomy, reproductive Biology and Conservation** held at CEMDE, Delhi University from Februaty 18-27<sup>th</sup>, 2009.
18. Resource person for **Workshop on Taxonomy, Ecology and Conservation** held at CEMDE, Delhi University from December 29<sup>th</sup> to January 7<sup>th</sup>, 2010.
19. Resource person in UGC sponsored 3-weeks "**Refresher Course on Environmental Studies – Emerging Trends in Sustainable Development**" held during January 7-28, 2013.
20. Resource person in **Refresher course in life Sciences organised by CPDHA, UGC –HRDC**, University of Delhi held during July17-Aug, 2018.
21. Member, Organising Committee 3rd National Conference of Seabuckthorn Association of India.Seabuckthorn: Translating Research into Sustainable Utilization and Conservation 19th-20th December, 2019,Department of Botany, University of Delhi, Delhi-110007, India
22. Session Convenor, Comprehensive policies for research and sustainable utilization. In 3rd National Conference of Seabuckthorn Association of India,Seabuckthorn: Translating Research into Sustainable Utilization and Conservation 19th-20th December, 2019,Department of Botany, University of Delhi, Delhi-110007, India
23. Attended 14th Meeting of Special Committee of Drug Standardization on dated Dec 2019 **as expert member** Special Committee for drug standardization of Central Council for Research in Homoeopathy (CCRH)

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**Other academic activities:**

- External Member- Research Advisory Committee, Microbial Technology Centre, Amity University NOIDA

- Expert Member, Special Committee for drug standardization of Central Council for Research in Homoeopathy (CCRH), AYUSH, Government of India

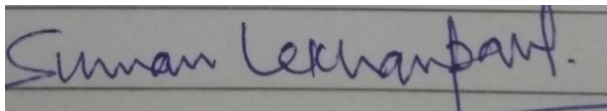
- Thesis examiner for Universities such as Indian Agricultural Research Institute ( Deemed University), Pondicherry University, Central University, Hyderabad, IIT, Kharagpur, Banasthali Vidyapeeth, Jamia Millia Islamia, Amity University etc.

-Member, Organising Committee 3rd National Conference of Seabuckthorn Association of India Seabuckthorn: Translating Research into Sustainable Utilization and Conservation 19th-20th December, 2019, Department of Botany, University of Delhi, Delhi-110007, India

-Session Convenor, Comprehensive policies for research and sustainable utilization. In 3rd National Conference of Seabuckthorn Association of India, Seabuckthorn: Translating Research into Sustainable Utilization and Conservation 19th-20th December, 2019, Department of Botany, University of Delhi, Delhi-110007, India

-Secretary, Indian Association of Mycoplasmologists w.e.f. December 3, 2019.

-Vice- president, Society for Ecological Restoration and Natural Resource Mangement

A rectangular box containing a handwritten signature in blue ink. The signature reads "Suman Lekhanpaul" in a cursive script.

Signature of Faculty Member