




Faculty Details Performa

Title	DR	First Name	ARCHA NA	Last Name	SINGH	Photograph
Designation	ASSITANT PROFESSOR					
Address	Department of Botany Hansraj College, University of Delhi New Delhi-110007					
Phone No Office	011-27667747					
Residence						
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Email	archanasingh@hrc.du.ac.in archananpcgr@gmail.com					
Web-Page						
Educational Qualifications						
Degree	Institution					Year
B.Sc (Hons.) Botany	Miranda House, University of Delhi					1999
M.Sc. Botany	Department of Botany, University of Delhi					2001
P. G. Diploma in Bioinformatics	Bioinformatics Institute of India (BII), Noida (U.P.) India					2003
Ph.D.	National Institute for Plant Genome Research, Aruna Asaf Ali Marg, New Delhi, India.					2008
Post-Doc	Department of Plant Pathology, University of Kentucky, USA.					2016
Post-Doc	Department of Molecular Ecology, Max Planck Institute of Chemical Ecology, Jena, Germany.					2019
Career Profile						
<ul style="list-style-type: none">• Visiting Research Scholar / Visiting Scientist at Department of Molecular Ecology, Max Planck Institute of Chemical Ecology, Jena, Germany (2019).• Visiting Research Scholar/ Visiting Faculty at Department of Plant Pathology, University of Kentucky, USA (2016-17).• Assistant Professor, Hans Raj College, University of Delhi, (July 2009-till date).• Research Fellow USI, IARI, New Delhi (2008-09).• Senior Research Fellow, NIPGR, Aruna Asaf Ali Marg, New Delhi (2005-07).• Junior Research Fellow NIPGR, Aruna Asaf Ali Marg, New Delhi (2003-05).						
Administrative Assignments						
<ul style="list-style-type: none">• Convener, Central Purchase Committee, Hansraj College, DU, 2020-21• Co-Convener, Research Cell, Hansraj College, DU, 2019-20• Member IIC-MHRD, Hansraj College, DU, 2019-2020• Teacher-In-Charge, Department of Botany, Hansraj College, DU, 2018-19• Co-Convener, Research Cell, Hansraj College, DU, 2018-19• Member of Purchase Committee, Hansraj College, DU, 2018-19• Member of Admission Committee, Hansraj College, DU, 2018-19• Member of Time-Table Committee, Hansraj College, DU, 2018-19						

<ul style="list-style-type: none"> • Member of screening Committee, Appointment for the post of Assistant Professor (Zoology) • Member of screening Committee, Appointment for the post of Assistant Professor (Botany) • Member of Environment Awareness Society, Hansraj College, DU • Member of Criterion 3, Research, SSR NAAC, Hansraj College, DU • Member, Research committee, Hansraj College, DU • Member, Library Committee, Hansraj College, DU • Member, Reception Committee for Annual Prize Distribution, Hansraj College, DU • Member, Election Committee, Hans Raj College, DU • Member, Organizing Committee Confluence, Annual festival of Hans Raj College, DU • Member of Advisory Board of “Dr Sama Day care centre” • Convener, Library Committee, Botany Department, Hansraj College 2017 • Member, Organizing committee, Sankalp se Siddhi (Manthan - Yeh India Ka Time Hai) at Hans Raj College, DU, 2018 • Member, IQAC (Criteria III) 2015-17 • Deputy Superintendent, Theory examinations 2015-16 • Deputy Superintendent, Theory examinations 2014-15 • Overall Co-ordinator, STAR College Scheme (DBT), 2012-13 • Overall Co-ordinator DST-funded INSPIRE Science Camp, 2012-13 • Convenor (Science) Time Table Committee 2012-2013 • Member, Internal Assessment Committee 2012-13 • Editor, College Annual report (English) in the academic year 2012-13. • Member, Development Fund Committee 2012-13 • Suprintendent, Practical Examinations 2011-12 • Staff Advisor, Life Science Society 2011-12 • Member (Science) Time Table Committee 2011-12 • Convenor, Internal Assessment Committee 2011-12 • Member, Development Fund Committee 2011-12
Areas of Interest / Specialization
Plant Molecular Biology; Functional Genomics, Plant Protection and Human Health
Subjects Taught
Cell and Molecular Biology, Genetics & Genomics, Plant Biotechnology, Bioinformatics
Research Guidance
<ul style="list-style-type: none"> • Post Doc: 1 (NPDF) • Ph.D.: 2 (Ongoing) • JRF: 1 (Ongoing) • Intern: 1 (Ongoing) • Project Fellows: 3 (Completed) • B.tech. (Major and Minor Project): 6 (3 Ongoing) • M.Sc. (Major Project): 1 • UG students: 22
Publications Profile

Selected Research Articles in peer reviewed journals:

1. Indrakant Kumar Singh, Pratibha Kumari, Pooja Mittal, Amit Kumar, Bharti Singal, Gulam Mustafa Hasan, Rajiv Aggarwal, Mohammad Amjad Kamal, **Archana Singh*** and Imtaiyaz Hassan*, "Emerging therapeutic approaches to COVID-19", *Current Pharmaceutical Design* (2021) 27: 1. <https://doi.org/10.2174/1381612827666210125160703> ***Corresponding author**
2. Kumari P, **Singh A***, Ngasaina MR, Shakeel S, Kumar S, Lal S, Singhal A, Sohal SS, Singh IK and Hassan MI (2020). Potential diagnostics and therapeutic approaches in COVID-19. *Clinica Chimica Acta* <https://doi.org/10.1016/j.cca.2020.08.013> *Equally Contributed. **(IF:2.615)**.
3. **Singh A**, Kumar A, Hartley S and Singh IK (2020) Silicon: Its ameliorative effect on Plant Defense against Herbivory. *Journal of Experimental Botany* (U.K.), **Accepted (IF: 5.9)**
4. Naqvi AAT, Fatima K, Mohammad T, Fatima U, Singh, IK, **Singh A**, Atif S M Hariprasad G-, Hasan GM and Hassan IM. Insights into SARS-CoV-2 genome, structure, evolution, pathogenesis and therapies: Structural genomics approach [published online ahead of print, 2020 Jun 13]. *Biochim Biophys Acta Mol Basis Dis.* 2020;1866(10):165878 **(IF: 4.328)**
5. Singh, S., Tyagi, C, Rather, I.A, Sabir, J.S, Hassan, M.I, **Singh, A*** and Singh, I.K. Molecular Modeling of Chemosensory Protein 3 from *Spodoptera litura* and its Binding Property with Plant Defensive Metabolites. *Int. J. Mol. Sci.* 2020, 21, 4073 **(IF: 4.183)**.
6. Mittal, P., Sinha, R., Kumar, A., Singh, P., Ngasainao, M. R., **Singh, A.*** and Singh, I. K. **(2019)** Focusing on DNA Repair and Damage Tolerance mechanisms in *Mycobacterium tuberculosis*: an Emerging Therapeutic Theme. *Current Topics in Medicinal Chemistry*. (Accepted) ***Corresponding author. (IF: 3.442)**
7. Mittal, P., Singh, S., **Singh, A.*** and Singh, I. K.* **(2019)** Current advances in drug delivery systems for treatment of Triple negative breast cancer (TNBC). *Chemical Biology Letters*. (Accepted)***Corresponding author.**
8. Arora R., Kumar A., Singh I. K, **Singh, A. ***, **(2019)** Pathogenesis related proteins: A defensin for plants but an allergen for humans. *International Journal of Biological Macromolecules*. [10.1016/j.ijbiomac.2019.11.223](https://doi.org/10.1016/j.ijbiomac.2019.11.223) **(IF: 5.162)**
9. Verma, P., Mittal, P., **Singh, A. ***, and Singh, I. K.* **(2019)**. New Entrants into Clinical Trials for Targeted Therapy of Breast Cancer: An Insight". *Anti-Cancer Agents in Medicinal Chemistry*. (Accepted) ***Corresponding author. (IF: 2.18)**
10. **Singh, A. ***, Kumar, A., Yadav, S. and Singh, I.K. Reactive oxygen species-mediated signaling during abiotic stress. *Plant Gene (Elsevier)* 18 **(2019)**, p.100173. ***Corresponding author (IF/CS: 3.8)**
11. Agrawal, P., Kumar S., **Singh A.**, Raghava G. P. S. * & Singh I. K. *. NeuroPIpred: a tool to predict, design and scan insect neuropeptides *Scientific Reports (Nature)* 9, **(2019)** Article number: 5129 **(IF: 4.011)**
12. Singh, S., **Singh, A. ***, Kumar, S., Mittal, P. and Singh, I.K. *, **(2018)**. Protease inhibitors: recent advancement in its usage as a potential biocontrol agent for insect pest management. *Insect science*. (doi: 10.1111/1744-7917.12641) ***Corresponding author. (IF: 2.71)**

13. Singh, A.K., Rajendran, V., Singh, S., Kumar, P., Kumar, Y., **Singh, A.**, Miller, W., Potemkin, V., Grishina, M., Gupta, N. and Kempaiah, P., **2018**. Antiplasmodial activity of hydroxyethylamine analogs: Synthesis, biological activity and structure activity relationship of plasmepsin inhibitors. *Bioorganic & medicinal chemistry*, 26(13), pp.3837-3844. **IF: 2.85**
14. **Singh A. ***, Jain D., Tyagi C, Singh S., Kumar S., and **Singh I. K. (2018)** *In- silico* prediction of active site and in vitro DNase and RNase activities of *Helicoverpa*-inducible Pathogenesis Related-4 protein from *Cicer arietinum*. *International Journal of Biological Macromolecules* 113 (2018) 869-880 (doi:10.1016/j.ijbiomac.2018.03.027) ***Corresponding author (IF: 4.7)**
15. **Singh A.**, Tyagi C, Nath O., and Singh I. K. **(2018)** *Helicoverpa*-inducible Thioredoxin h from *Cicer arietinum*: structural modeling and potential targets. *International Journal of Biological Macromolecules* 109 (2018) 231–243 (doi.org/10.1016/j.ijbiomac.2017.12.079) **(IF: 4.7).**
16. **Singh A.**, Nath O., Singh S., Kumar S., and Singh I. K. **(2018)** Genome-Wide Identification of the MAPK Gene Family in Chickpea and Expression Analysis during Development and Stress Response. *Plant Gene* 13: 25-35 (doi.org/10.1016/j.plgene.2017.12.001). **(IF/CS: 1.88)**
17. Singh I. K., Kumar S., Singh S. and **Singh A.*** (2017) Expression profiling of mitogen-activated protein kinase genes from chickpea (*Cicer arietinum* L.) in response to *Helicoverpa armigera*, wounding and signaling compounds. *Journal of Asia-Pacific Entomology* 20(3): 942-948. doi: 10.1016/j.aspen. 2017.07.003) ***Corresponding author (IF: 0.967)**
18. Nath O, **Singh A[#]** and Singh IK (2017) In-Silico Drug discovery approach targeting receptor tyrosine kinase- like orphan receptor 1[Ror1] for cancer treatment. *Scientific Reports* 7:1029 (doi:10.1038/s41598-017- 01254-w) **#Equal Contribution. (IF: 4.011).**
19. **Singh A**, Lim GH and Kachroo P (2017). Transport of chemical signals in systemic acquired resistance. *Journal of Integrated Plant Biology* 59(5) 336-344. doi:10.1111/jipb.12537 [10.1111/jipb.12537] **(IF: 3.8)**
20. Tyagi C, **Singh A** and Singh IK (2016). Mechanistic insights into mode of action of rice allene oxide synthase on hydroxyperoxides: An intermediate step in herbivory-induced jasmonate pathway. *Computational Biology and Chemistry* 64:227-236. **(IF: 1.581)**
21. **Singh, A.** Singh, S. and Singh I. K. (2016). Recent insights into the molecular mechanism of Jasmonate signaling during Insect-Plant Interaction. *Australasian Plant Pathology* 45:123–133 (DOI:10.1007/s13313-015-0392-1) **(IF: 1.106)**
22. **Singh, A.** Bharti Singal, Nath, O. and Singh I. K. (2015). Functional Annotation and Classification of the Hypothetical Proteins of *Neisseria meningitidis* H44/76. *American Journal of Bioscience and Bioengineering* 3(5):57-64. doi: 10.11648/j.bio.20150305.16.
23. Gao Q-M., **Singh A.**, Kachroo A. and Kachroo P. (2013) Long Distance Signaling During Systemic Acquired Resistance. *Indian J. Agric. Biochem.* 26 (2), 111-117.
24. Jaiswal P., Cheruku J. R., Kumar K., Yadav S., **Singh A.**, Kumari P., Dube S. C., Upadhyaya K. C., 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(4):4635- 4646. (IF: 2.107)

25. **Singh, A.**, Singh, I. K. and Verma, P. K. (2008). Differential Transcript Accumulation in *Cicer arietinum* L. in Response to Chewing Insect *Helicoverpa armigera*, Mechanical Damage and Signaling Molecules Correlates with Feeding/Dispersal Behavior. *Journal of Experimental Botany* (U.K.), 59(9): 2379 - 2392. (IF: 5.9)

Books Edited

- Singh, I. K. and **Singh, A.** (eds.) (2020) "Plants interactions with Insects: From molecular Mechanism to chemical ecology"" published from Springer-Nature (In press) eBook ISBN 978-981-15-2467-7; DOI 10.1007/978-981-15-2467-7.
- **Singh A** and Singh I K (eds) (2018). Molecular Aspects of Plant-Pathogen Interaction.) **Springer** DOI: 10.1007/978-981-10-7371-7(ISBN 978- 981-10-7370-0).

Book Chapters Authored

- Singh S., **Singh A***, Singh I.K. (2020) Transcriptomics studies revealing enigma of Insect-plant interaction. In Singh, I. K. and Singh, A. (eds.) "Plants interactions with Insects: From molecular Mechanism to chemical ecology"" published from Springer-Nature (In press) eBook ISBN 978-981-15-2467-7; DOI 10.1007/978-981-15-2467-7. (In Press) *Corresponding Author.
- **Singh A***, Kumar A., Singh I.K. (2020) Marine Flora: Source of Drugs from the Deep-Sea Environment. In Nathani N., Mootapally C. S., Gadhvi I. R., Maitreya B. and Joshi C G (eds) Marine Niche: Applications in Pharmaceutical Sciences. Springer, Singapore, eBook ISBN 978-981-15-5017-1 (In Press) *Corresponding Author
- Rai S., Kumar A., Singh I K and **Singh A***. Seed borne diseases and its management. In Tiwari A. K. (eds) Advances in Seed production and Management. Springer, Singapore, eBook ISBN978-981-15-4198-8; DOI: 10.1007/978-981-15-4198-8. (In Press) *Corresponding Author.
- Agrawal S, Panwar R., Kumar A, Singh I K and **Singh A***. Seed infesting pests and their control strategies In Tiwari A. K. (eds) Advances in Seed production and Management. Springer, Singapore, eBook ISBN: 978-981-15-4198-8; DOI: 10.1007/978-981-15-4198-8. (In Press) *Corresponding Author
- **Singh A***, Bhardwaj R., Singh I.K. (2019) Biocontrol Agents: Potential of Biopesticides for Integrated Pest Management. In: Giri B., Prasad R., Wu QS., Varma A. (eds) Biofertilizers for Sustainable Agriculture and Environment. Soil Biology, vol 55. Springer, Cham, Online ISBN: 978-3-030-18933-4) *Corresponding Author.
- Maurya A. K., and **Singh, A.** (2014) **Global Environmental Issues and Sustainable Development** In: Basic Environmental Studies, (Eds.) Singh I. K. and Maurya A. K. *Book Age Publications*, New Delhi. pp. 131-152. ISBN: 978-9383281-41-1.
- Maurya A. K., and **Singh, A.** (2014) **Environmental Policies and Practices** In: Basic Environmental Studies, (Eds.) Singh I. K. and Maurya A. K. *Book Age Publications*, New Delhi. pp. 153-174. ISBN: 978- 9383281-41-1.

- Maurya A. K., Monita and **Singh, A.** (2014) **Field Work In: Basic Environmental Studies**, (Eds.) Singh I. K. and Maurya A. K. *Book Age Publications*, New Delhi. pp. 196-219. ISBN: 978-9383281-41-1.
- Singh I. K. and **Singh, A.** (2014) **“Evolution”** (Unit 5) in the text book of XII for new CBSE-international (CBSE-i) which is available online for CBSE-i schools only”.
- **Singh, A.** and Singh I. K. (2014) **“Molecular Basis of Inheritance”** (Unit 4) in the textbook of XII for new CBSE-international (CBSE-i) which is available online for CBSE-i schools only”.
- **Singh, A.** and Singh I. K. (2014) **“Heredity and Variation”** (Unit 3) in the textbook of XII for new CBSE-international (CBSE-i) which is available online for CBSE-i schools only”.

Publications in Conference Proceedings

- Singh, I.K., Mittal, P., Kumar, S., Singh, S. and **Singh, A.*.** (2020) Potentials of omics technologies and RNAi in insect pest management. In “**BIOSANGAM 2020 An International Conference: Biotechnological Intervention in Societal Development**” held on February 21-23, 2020 at MNIT Allahabad, Prayagraj, INDIA.
- Mittal, P., Singh, S. **Singh, A.*.**, and Singh, I. K*. (2020) Drug Delivery Systems for Triple-negative breast cancer (TNBC): treatment and current advances. In “**International Conference on Natural Products and Human Health 2020**” held on February 27-29, 2020 at University of Delhi, Delhi, INDIA.
- Guria, V. R., **Singh, A.*.**, and Singh, I. K*. (2020) Effect of Natural Products on the Regulation of the Hippo Pathway. In “**International Conference on Natural Products and Human Health 2020**” held on February 27-29, 2020 at University of Delhi, Delhi, INDIA.
- Singh, I. K., Mittal, P., Kumar, S. and Singh, A. (2020) Crafting insect-specific tools for IPM using RNA interference & omics techniques. In “**International Conference on Natural Products and Human Health 2020**” held on February 27-29, 2020 at University of Delhi, Delhi, INDIA. ISBN 9788194428237
- Kumar, A., Singh, I.K. and **Singh, A.*.** (2019) Genome-wide Identification, Characterization and Expression Analysis of Calmodulin-like (CML) Protein from Glycine max. In “**National Conference on Insect-Plant Biology in 21st Century**” held on November 4-5, 2019 at Deshbandhu College, University of Delhi, INDIA.
- Panwar, R., Kumar, A., Singh, I.K. and **Singh, A.*.** (2019) Functional Characterization of Cytochrome P450 Proteins from Glycine max involved in Jasmonate Turn over during *Spodoptera litura* Infestation. In “**National Conference on Insect-Plant Biology in 21st Century**” held on November 4-5, 2019 at Deshbandhu College, University of Delhi, INDIA.
- Keshan, R., Singh, I.K. and **Singh, A.*.** (2019) Pathogenesis Related Protein-4: A Defensin for Plants but an Allergen for Humans In “**National Conference on Insect-Plant Biology in 21st Century**” held on November 4-5, 2019 at Deshbandhu College, University of Delhi, INDIA.
- Singh, S., **Singh, A.*.**, Kumar, S., Mittal, P. and Singh, I.K.* (2019) Mapping of Larval Midgut Response of *Spodoptera litura* upon Feeding *Zea mays*. In “**National Conference on Insect-Plant Biology in 21st Century**” held on November 4-5, 2019 at Deshbandhu College, University of Delhi, INDIA

- Kumar, S., Agarwal, P., **Singh, A.**, Raghava, G.P.S. and Singh, I.K.* (2019) A Computational Tool for Predicting, Designing and Scanning Insect Neuropeptides. In “National Conference on Insect-Plant Biology in 21st Century” held on November 45, 2019 at Deshbandhu College, University of Delhi, INDIA
- Singh, S., Kumar, S., **Singh, A.** and Singh, I.K.* (2019) Neonicotinoids- A milestone of agrochemical research with deadly impact on human health In “1st INTERNATIONAL CONFERENCE on Integrative Chemistry, Biology and Translational Medicine (ICBTM-2019) organized by Centre for Global Health, Hansraj College, University of Delhi and Loyola University Chicago Stritch School of Medicine, USA.
- Singh I. K., Nath, O., and **Singh, A.** (2018). In-Silico Drug Discovery Approach for Cancer Treatment. In “National Conference on Disease and Drugs: Emerging Trends and Challenges” held on January 31-February 1, 2018 at Zakir Husain Delhi College, University of Delhi, New Delhi, INDIA.
- **Singh, A.**, Tyagi, C., Nath, O., Mangangcha, I. R., and Singh, I. K. (2017) Structural and Functional characterization of Helicoverpa-inducible Thioredoxin h from Cicer arietinum. In National Conference on Protein Structure and Dynamics in Health and Agriculture held on November 3-4, 2017 at Jamia Millia Islamia, New Delhi, INDIA.
- Singh, I. K., Jain, D., Tyagi, C., Singh, S., Kumar, S. and **Singh, A.** (2017) In-silico prediction of active site of Pathogenesis Related-4 protein from Cicer arietinum displaying RNase and DNase activities. In National Conference on Protein Structure and Dynamics in Health and Agriculture held on November 3-4, 2017 at Jamia Millia Islamia, New Delhi, INDIA.
- **Singh A**, Singh IK, Kumar S, and Singh S (2017). Microarray analysis of Maize’s early response to mechanical wounding and its comparison to Insect Attack. In 59th Annual Maize Genetics Conference at the Union Station, St. Louis, Missouri, USA held from March 9-12, 2017.
- Singh IK, **Singh A**, Kumar S, and Singh S (2017) Genome-wide expression profiling of Maize in response to polyphagous herbivore *Spodoptera litura*. In 59th Annual Maize Genetics Conference at the Union Station, St. Louis, Missouri, USA held from March 9-12, 2017.
- **Singh A**, Singh IK, Nath O, Kumar S, and Singh S (2017) Genome-Wide Identification of MAPK Gene Family in Chickpea and Expression Analysis during Development and Stress Response. In American Society of Plant Biology (Midwestern Section) at Stewart Center/Purdue University, Indiana, USA held on Feb 4-5, 2017
- Singh IK, **Singh A**, Singh S, and Kumar S (2017) Expression profiling of Mitogen-activated Protein Kinase (MAPK) genes from Cicer arietinum in response to Helicoverpa armigera, Wounding and Signaling compounds In American Society of Plant Biology (Midwestern Section) at Stewart Center/Purdue University, Indiana, USA held on Feb 4-5, 2017
- **Singh A.**, Singh IK and Jain D (2015) “Functional characterization of *Helicoverpa*-inducible pathogenesis-related protein 4A (PR-4A) from chickpea” in the PLANT BIOLOGY 2015 (The Annual Meeting of the American Society of Plant Biologists) held at the Minneapolis Convention Center in Minneapolis, Minnesota USA from 26th -30th July 2015.
- Singh IK, Tyagi C and **Singh A** (2015) Mechanistic insights into mode of action of rice allene oxide synthase on hydroxyperoxides: an intermediate step in herbivory-induced jasmonate pathway,

presented in the PLANT BIOLOGY 2015 (The Annual Meeting of the American Society of Plant Biologists) from 26th -30th July 2015 held at the Minneapolis Convention Center in Minneapolis, Minnesota USA.

- Singal B., **Singh A.**, Singh S., Nath O., Sanjay and Singh I. K. (2015) Functional annotation of the hypothetical proteins of *Neisseria meningitidis* H44/76. *In: Proc. International Conference on Mathematical and Computational Biology IIT, Kanpur pp.* 34-35.
- Nath O., **Singh A.**, Singh S., Singal B., Sanjay and Singh I. K. (2015) Structural Homology modeling of Aspartate transaminase [*Bacillus Halodurans* c-125]. *In: Proc. International Conference on Mathematical and Computational Biology IIT, Kanpur pp.* 44-45.
- Singh I. K., Nath O., **Singh A.**, Singal B., Singh S. And Sanjay (2015) Identification of probable lead compounds for inhibition of CRY protein in *Pisum sativum* by structure modeling and pharmacophore designing. *J. Proteins and Proteomics* 6(1):24.
- Singh I. K., **Singh A.**, Rai P, and Mangangcha I. R. (2012). Role of mitochondrial antioxidants in tolerance against radiation stress in plants. *J Nat. Sc. Biol. Med.* 2:156.
- Singh IK, **Singh A.**, and Singh AK (2010). Structural and functional analysis of Hevein-like Protein in Chickpea, presented in The 7th Indo-Australia Biotechnology Conference” held from 25–27 October 2010 at Queensland Medical Research Institute (QIMR), Brisbane, Australia.
- **Singh A.**, Singh, IK, Kawatra, VK and Chandrasekharan H (2010). Genome wide analysis of Ankyrin repeat proteins in Arabidopsis and Rice, presented in The 7th Indo-Australia Biotechnology Conference” held from 25–27 October 2010 at Queensland Medical Research Institute (QIMR), Brisbane, Australia.
- **Singh A.**, Pradeep, Sharma R, Mishra AK and Chandrasekhan H (2009). Identification of transcription factor binding sites in a salt-induced gene of wheat using comparative genomic approach. *Proc. Natl. Conf. Biodiversity& Agribiotechnology.* pp 149.
- Singh IK. and **Singh A.** (2009). *In silico* structure and function prediction of Hevein-like Protein of *Arabidopsis thaliana*. *Proc. Natl. Conf. Biodiversity& Agribiotechnology.* at Jaypee Institute of Information Technology (JIIT) University, Noida on April 25, 2009.
- Jaiswal P, **Archana**, Kumar K, Upadhyaya K, Verma P (2004). “Functional genomics of Chickpea in response to *Ascochyta* infection.” *In: Plant & Animal Genomes XII Conference*, January 10-14, 2004, San Diego, CA.
- Iyer RI, **Archana**, Sawhney N and Sawhney S (2003) “In vitro Morphogenetic potential of *Michelia chempaca* L.” *In: 2nd International Congress of plant physiology* 8-12 January 2003, New Delhi, India.
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Conference Organization/ Presentations

- Organized as a **Co convenor**, FDP entitled “Fundamentals of Intellectual Property Rights” organized by PMMNMTT, Hansraj College, University of Delhi, 2020.
- Organized as a **member** a national seminar on “Environment and sustainability in the third world” at Hansraj College, University of Delhi, 2020.

- **Organized as a member a national leadership summit on “Excellence in Education: Current Challenges and the road ahead”** organized by PMMMNMTT, Hansraj College, University of Delhi, 2019.
- **Convenor (Plant biology)** “National Conference on Insect-Plant Biology in 21st Century” held on November 4-5, 2019 at Deshbandhu College, University of Delhi, INDIA
- **Convened /organized** an FDP entitled “Agriculture, Science and Society” in collaboration with PMMMNMTT, Hansraj College, University of Delhi, 2019.
- Organized as a **member (Organizing Committee member)**, an International Conference, Integrative Chemistry Biology and Translational Medicine-2019, organized by Loyola University, Chicago, USA and Hansraj College, DU.
- **Resource person** in a workshop on “Development of e-Resource in Biology at Primary Stage and QR Code” March 5-7, 2019 Organized by DESM, NCERT, NIE campus New Delhi-110016, India
- **Subject Expert** in a workshop entitled “A study of Biology Syllabi at the Higher Secondary Stage” organized by Department of education in Science and mathematics, NIE, NCERT, New Delhi from February 04-08, 2019 Organized by DESM, NCERT, NIE campus New Delhi-110016, India.
- Organized as a **member (Organizing Committee member)**, Indo-US Colloquium on Recent Developments in Interdisciplinary Sciences, 2nd July, 2018, at Hansraj College, DU.
- **University Deputy Coordinator for Science Ambassador Program** by Bio-Rad Laboratories (India) and organized its launch program “**1st Science Ambassador Program 2017**”, at St. Thomas Sr, Sec. Girls School, New Delhi on October 6, 2017.
- **Resource person** in a workshop on “Development of e-Resource in Biology at Higher Secondary Stage” November 23-27, 2017 Organized by DESM, NCERT, NIE campus New Delhi-110016, India
- **Resource person** at Faculty Development Program on “Recent Trends in Bioinformatics” organized by DDU, University of Delhi
- Organized / Attended a seminar on the eve of World’s Ozone Day by **Maharaj K Pandit, Dean, Faculty of Science, University of Delhi.** at Hansraj College, DU. Under the aegis of Haritima in association with MIEF, on 16th September 2017.
- Organized / Attended a seminar on “Molecular and Chemical Signalling in Plant Defense” by **Prof. Pradeep Kachroo**, Professor, Department of Plant Pathology, University of Kentucky, USA, under the aegis of IQAC, Hansraj College, DU.
- **Deputy Coordinator, INSPIRE Internship 2014 (DST, Govt. of India)** at Deshbandhu College, University of Delhi, from 17-21st December 2012.
- **Coordinator, INSPIRE Internship 2012 (DST, Govt. of India)** at Hansraj College, University of Delhi, from 17-21st December 2012.

Trainings/workshop Participated:

- Successfully participated as a **subject expert** in a workshop entitled **“A study of Biology Syllabi at the Higher Secondary Stage”** organized by Department of education in Science and mathematics, NIE, NCERT, New Delhi from **04.02.2019** to **08.02.2019**.
- Successfully completed a two day workshop on **“Introductory Evolutionary and Phylogenetic Biology 2019”** organized by Department of Botany, University of Delhi, Delhi.
- Successfully participated in a two weeks **Faculty development Program** on **“Challenges before the Academia in the Era of Gadgets, E-communication and Artificial Intelligence (Interdisciplinary)”** organized by Mahatma Hansraj Faculty Development Centre from 15.12.2018 to 28.12.2018.
- Successfully participated in a workshop and Hands-on Experience in **“Advanced Spectroscopy and Dynamic Light Scattering”** organized by Department of Zoology, Kirorimal college, University of Delhi on 09.10.2018.
- Successfully completed a **three weeks Refresher Course in Life science** organized by CPDHE (UGC-HRDC), University of Delhi, from July 17 to august 06, 2018.
- Successfully completed **“The 2017 Essential Skills for Next Generation Sequencing and Data Analysis Workshop”** conducted by University of Kentucky and Bluegrass Community & Technical College, sponsored by the Kentucky Biomedical Research Infrastructure Network on July10-14, 2017.
- Successfully Completed Training Program on **Fire Safety, Chemical Fume Hood, Hazard Communication, Hazardous Waste, Autoclave, Chemical Hygiene Plan (Lab Safety) and Biosafety** from July 18-August 8, 2016 at College of Agriculture, Food and Environment, University of Kentucky, Lexington, USA.
- Participated in **“1st Plant Proteomics Workshop/ Training Program”** December 26-30, 2013 Organized by Department of Botany, University of Delhi, New Delhi, India.
- Participated in **Refresher course** in: Life Sciences / Biological Sciences / Bioinformatics organized by CPDHE, University of Delhi (South Campus) from February 25th to March 16, 2013.
- Participated in **“3rd Workshop of Organizers of DST Inspire–Science Camps”** April 11-12, 2013 Organized by Pondicherry University, Port Blair, A & N Islands, India and Dept. of Science & Technology Government of India.
- Participated in 98th **Orientation Programme** organized by UGC-ASC, Jamia Millia Islamia, New Delhi from 30th September to 1st November, 2011.
- Participated in a workshop entitled **“Fundamental of Bioinformatics” for Faculty of Life Sciences** jointly organized by Institute of Life Long Learning (ILLL) and Ramjas College, University of Delhi held from September 26 -30, 2011.
- Participated in a National Workshop on **“Evolutionary Perspectives in Modern Biological Teaching and Research”**, May 9-10, 2011 at University of Delhi, Delhi.
- Participated in a National workshop-cum-training on **“Bioinformatics Applications in Crop Sciences”** held from December 21-23, 2009 at Indian Agricultural Research Institute (IARI), New Delhi.
- **“Workshop on “Biotechniques”** From *January 11-13, 2002*, conducted by “Institute of Genomics

Conferences/Seminars Organized/ Participated/ Attended:

- Participated in an interactive meet on **"Molecular Intricacies of Plant Associated Microorganisms (MIPAM-2019)"** held at National Institute of Plant Genome Research, New Delhi during February 1-3, 2019.
- Organized and participated attended **"INDO-US Colloquium on Recent Developments in Interdisciplinary Research"** jointly organized by Department of Chemistry, Hansraj college, University of Delhi and Loyola University Stritch School of Medicine, Marywood, IL, USA
- Attended **"INDO-HUNGARIAN SYMPOSIUM"** on Recent advances in Chemistry and Biology (INHCAB-2017) organized by Miranda House, DU.
- Attended and participated in **"National Conference on Protein Structure and Dynamics in Health and Agriculture"** (November, 2017), organized by Jamia Milia Islamia under the aegis of Protein Society of India.
- "Attended a **"National Workshop"** organized by Grace India on **"How to get research papers published in Right Journals"**, October 7, 2017.
- Organized and attended a seminar on the eve of World's Ozone Day by **Maharaj K Pandit, Dean, Faculty of Science, University of Delhi.** at Hansraj College, DU. Under the aegis of Haritima in association with MIEF, on 16th September 2017.
- Organized and Attended a seminar on "Molecular and Chemical Signalling in Plant Defense" by **Prof. Pradeep Kachroo**, Professor, Department of Plant Pathology, University of Kentucky, USA, under the aegis of IQAC, Hansraj College, DU.
- Attended a lecture on **" Enhancing transgene expression in Plants: Why and How?"** by Prof. Pradeep Kumar Burma, Professor and Head Department of Genetics, Delhi University, South Campus, on April 5, 2018 at Hansraj College.
- Attended a lecture on **"Nitrosylation mediated Nitric oxide (NO) signaling in cold stress in Brassica juncea seedlings"** by Prof. Renu Deswal, Professor, Department of Botany, University of Delhi
- Attended a lecture on **"RNA Interference: Biology and Applications"** by Prof. M. V. Rajam, Professor, Department of Genetics, Delhi University, South Campus
- Attended a **"National Symposium on Vector Biology and Vector Management"** June 21, 2013 Organized by Deshbandhu College, University of Delhi, New Delhi, India.

- Attended a seminar on **“The Academic Congress Enabling the Young: Redefining Education”** on September 6-7, 2012 Organized by the University of Delhi, Delhi, India.
- Attended an International symposium on **Microbial Biotechnology: Diversity, Genomics and Metagenomics** held from 18th to 20th November, 2008 at University of Delhi, Delhi, India.
- Attended an International Interdisciplinary Science Conference (I-ISC 2011) on **“Bioinformatics: An Interface between Computer Science and Biology”** organized by Centre for Interdisciplinary Research in Basic Sciences, Jamia Millia Islamia, New Delhi, India held from November 15-17, 2011.
- Attended a national seminar on **“Frontiers and Avenues in Plant Sciences 2011”** Shivaji College, University of Delhi.
- Participated in an international Interdisciplinary Science Conference (I-ISC-2012) On **“Protein Folding and Diseases”** December 9-10, 2012 Organized by the Centre for Interdisciplinary Research in Basic Sciences, Jamia Millia Islamia, New Delhi-110025, India.
- Attended a national symposium on **“Frontiers in Plant Molecular Biology”**, September 27-28, 2013, organized by Department of PMB, University of Delhi.

Research Projects (Major Grants/Research Collaboration)

A. Project details funded by External Agencies:

S. No.	Title	Duration	Role	Awarding Body	Status
1.	Proteomic analysis of herbivory induced defense response in <i>Zea mays</i> upon <i>Spodoptera litura</i> infestation.	2020-22	Mentor	SERB-DST	Ongoing
2.	A Quantitative Trait Loci Mapping study to detect variation in JA signaling in the MAGIC population of <i>Nicotiana attenuata</i> .	2019	EMBO Research Fellow	EMBO, Meyerhofstrasse Heidelberg, Germany	Completed
3.	Functional analysis of <i>Spodoptera litura</i> -inducible calmodulin-like protein from <i>Glycine max</i>	2018-21	PI	Early Career research Award SERB-DST	Ongoing
4.	Identification of G3P-dependent proteins and deciphering their role in plant systemic immunity	2016-17	Co-PI	UGC	Completed

5.	"Cloning and functional characterization of <i>Helicoverpa</i> -inducible hevein-like protein from chickpea"	2013-16	PI	Fast Track DST	Completed
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B. Projects funded by University of Delhi for Undergraduate Students:

S. No.	Title	Cost in lakhs	Duration	Role	Awarding Body	Status
1.	Comprehension of ethnic practices of selected Indian tribes as pro-ecological customs and their deviation from the stream	3.5	2 years	PI	Delhi University	Completed
2.	Critical and Scientific analysis on use of alternative medicines with practical approach and case studies	3.5	1 year	Co-PI	Delhi University	Completed

Awards and Distinctions

Awards and Honors:

- Awarded **EMBO fellowship, 2019** by **European Molecular Biology Organization**, Meyerhofstrasse Heidelberg, Germany.
- Awarded **Early Career Research Award**, 2018 by SERB-DST, Ministry of Science & Technology, Govt. of India.
- Awarded "**Distinguished Scientist Award**" during an International Conference, ICBTM-2019, organized by Loyola University, Chicago, USA and Hansraj College.
- Awarded **Bharat Ratna Dr APJ Abdul Kalam Memorial Grace India Best Teacher Award**, on 87th Birth Anniversary of honorable former President of India, for exemplary contribution in the field of education at Hansraj College, University of Delhi.
- Awarded **Raman Post-Doctoral Fellowship** for Research at University of Kentucky, USA by University Grant Commission, Govt. of India (July 2016-July 2017)
- **Best Researcher Award**, 2017 by Grace India at Hansraj College, University of Delhi.

- Invited as a **Resource person** at Faculty Development Program on “Recent Trends in Bioinformatics” organized by DDU, University of Delhi.
- Awarded **International Travel grant** (DST, Govt. of India) for attending the PLANT BIOLOGY 2015 (The Annual Meeting of the American Society of Plant Biologists) from 26th -30th July 2015 held at the Minneapolis Convention Center in Minneapolis, Minnesota USA.
- Invited as a **Resource person** in a workshop entitled “**Development of e-Resource in Biology at Higher Secondary Stage**” November 23-27, 2017 Organized by DESM, NCERT, NIE campus New Delhi-110016, India.
- Invited as a **Subject Expert** in the workshop entitled “**A study of Biology Syllabi at the higher Secondary Stage**” February 4-8, 2019 Organized by DESM, NCERT, NIE campus New Delhi-110016, India.
- Invited as “**University Deputy Coordinator for Science Ambassador Program**” by Bio-Rad Laboratories (India) in association with Deshbandhu College, DU and organized its launch program “**1st Science Ambassador Program 2017**”, at St. Thomas Sr, Sec. Girls School, New Delhi on October 6, 2017.
- **Young Scientist Award** 2012, by DST, Ministry of Science & Technology, Govt. of India,
- Invited as a **member of jury for INSPIRE AWARD** National Level Exhibition and Project Competition (NLEPC)-2012, 2013, 2014, 2015.
- Appointed as Deputy **Coordinator, Inspire Internship, 2014 (DST, Govt. of India)** at Deshbandhu College, University of Delhi, from 17-21st December 2012.
- Appointed as **Material Developer** for BIOLOGY of International Curriculum- **CBSE-I**
- Appointed as **Ideator** of material production group for International Curriculum-**CBSE-I**
- Appointed as **Coordinator, Inspire Internship, 2012 (DST, Govt. of India)** at Hanraj College, University of Delhi, from 17-21st December 2012.
- Awarded **International Travel grant** (DBT, Govt. of India) for attending the 7th Indo-Australia Biotechnology Conference” held from 25–27 October 2010 at Queensland Medical Research Institute (QIMR), Brisbane, Australia.
- **Project Fellowship**, December 2008- July 2009 DBT, Govt. of India.
- Qualified **Joint CSIR-UGC Junior Research Fellowship (JRF)** and Eligibility for Lectureship – National Eligibility Test (**NET**) held on 23rd June 2002.
- **Merit Scholarship** availed from Miranda house for securing University rank in 1998-99.

Association with Professional Bodies

- Member of **American Society of Plant Biology**.
- Life Member of **Indian Biophysical Society**.

- Life Member of Association of **Indian Microbiologists of India.**

Other/ Outreach Activities

Invited to review research articles of the following international journals:

- Frontiers in Plant Sciences
- Journal of Functional Foods (*Elsevier*)
- BMC Plant Biology (Bio Med Central)
- Current Bioinformatics (Bentham Sciences)
- Current Topics in Medicinal Chemistry (Bentham Sciences)
- Plant Science today
- International Journal of Pure and Applied Zoology

GenBank Submissions:

- **Singh A**, Singh IK, and Verma PK **2007**. Molecular responses of *Cicer arietinum* genes in response to insect attack. **64 unique cDNA sequences** isolated by Suppression subtractive Library.
- **Singh A** and Verma PK **2008**. Molecular responses of *Cicer arietinum* genes in response to Ascochyta infection. **77 unique cDNA sequences** isolated by Suppression subtractive Library.

Invited Talks Delivered/Expert Panel on FM Radio:

- Delivered an invited talk on “**Molecular Biology Techniques made simple: PCR and QPCR**” in an ADD ON course at Swami Shradhanand College, 2020.
- Delivered an invited talk on “**Plant Biotechnology & its Application**” , **2014**, at Hi-Tech Institute of Engineering & Technology, Ghaziabad- 201015, India.
- Delivered talk on “**Wet lands & Mangrove in India**” at **DUCR FM 90.4** (Broadcasted on air in July 2012) in the program “**VIGYAN HAMARE AAS PAS**” Sponsored by **DST, Govt. of India.**
- Discussion panelist on Topic- “**Bt crop: Say Yes or No**” at **DUCR FM 90.4** (Broadcasted on air in April 2012) in the program “**VIGYAN HAMARE AAS PAS**” Sponsored by **DST, Govt. of India.**

Archana Singh

Signature of Faculty Member

