Archana Singh

Curriculum Vitae July2022

Associate Professor & IOE Fellow
Department of Botany
Hansraj College
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Education:

2019	EMBO Fellow	Molecular Ecology, Max-Planck Institute for Chemical Ecology, Max-Planck Institute for Chemical Ecology, Jena, Germany
2016-2017	UGC, Post-doctoral	Department of Plant Pathology, University of Kentucky, Lexington, USA
2008	Ph.D.	National Institute of Plant Genome Research (DBT), Aruna Asaf Ali Marg, New Delhi
2002	PGDBI	National Institute of Bioinformatics, Noida.
1999-2001	M.Sc. Botany	Department of Botany, University of Delhi, Delhi
1996-1999	B.Sc. (Hons) Botany	Miranda House, University of Delhi, Delhi

Appointments and Positions:

2022-onwards IOE Fellow, School of Climate Change and Sustainability, IOE, University of Delhi.

2021- pres.	Associate Professor, Department of Botany, Hansraj College, University of Delhi, Delhi.
2010-2021	Assistant Professor (Permanent), Department of Botany, Hansraj College, University of Delhi, Delhi.
2009-2010	Assistant Professor (Ad-hoc), Department of Botany, Hansraj College, University of Delhi, Delhi.

Awards/Fellowships:

2022	**IOE Fellow**, School of Climate Change and Sustainability, IOE, University of Delhi.
2022	Awarded **Power Grant (SPG)** by **SERB-DST**, Ministry of Science & Technology, Govt. of India.
2021	Awarded "**Outstanding Woman Researcher in Plant Molecular Biology**" in the 7th Venus International Women Awards – VIWA 2022.
2019	**EMBO fellowship,** by *European Molecular Biology Organization*, Meyerhofstrasse Heidelberg, Germany.

2019 **Distinguished Scientist Award**" during an International Conference, **ICBTM-2019**, organized by Loyola University, Chicago, USA and Hansraj College.

2018 **Early Career Research Award (Project)**, by **SERB-DST**, Ministry of Science & Technology, Govt. of India.

2018 Bharat Ratna Dr. A. P. J. Abdul Kalam Memorial Grace India "**Best Teacher Award, 2018"** for contributions to research by Grace India Educational Charitable Trust, New Delhi, in the award ceremony at Hans Raj College, Delhi, India.

2017 **Best Researcher Award, 2017**, from Grace India Educational Charitable Trust, New Delhi, for research contribution in the award ceremony held at Hans Raj College, Delhi, India

2016-2017 **University Grant Commission (UGC)-Raman Post-doctoral Fellowship** to work at Department of Plant Pathology, University of Kentucky, Lexington, USA

2013-2016 Fasttrack **Young Scientist Scheme Award,** Science and Engineering Research Board (SERB), Department of Science & Technology, Govt. of India, New Delhi

2015 **Best Display Award (**Innovation Projects on use of alternative medicines) by University of Delhi.

2015 **International Travel grant** (DST, Govt. of India) for participating in the PLANT BIOLOGY 2015, Minnesota, USA

2010 **International Travel grant** (DBT, Govt. of India) for attending the 7th Indo-Australia Biotechnology Conference, Brisbane, Australia.

2003 Qualified **Joint CSIR-UGC Junior Research Fellowship (JRF)** and Eligibility for Lectureship – National Eligibility Test **(NET)** held on 23rd June 2002.

1999 **Merit Scholarship** availed from Miranda house for securing University rank in 1998-99.

Extramural Research Grant Awarded:

2022-25 Funded by SERB, Ministry of Science & Technology, Govt. of India "Deciphering the MAPK Pathway in Glycine max during Spodoptera litura – infestation" (**PI**)

2022-23 Funded by Hansraj College, ""Identification of potential allergenic proteins from Tomato" (**PI**)

2020-2022 Funded by SERB, Ministry of Science & Technology, Govt. of India " Proteomic analysis of herbivory induced defense response in *Zea mays* upon *Spodoptera litura* infestation " **(Mentor / PI)**

2018-2022 Funded by SERB, Ministry of Science & Technology, Govt. of India " Functional analysis of *Spodoptera litura*-inducible calmodulin-like protein from *Glycine max***" [PI]**

2019 Funded by EMBO, **Meyerhofstrasse Heidelberg, Germany** " A Quantitative Trait Loci Mapping study to detect variation in JA signaling in the MAGIC population of *Nicotiana attenuata* " **(CoPI)**

2016-2017 Funded by UGC, Govt. of India " Identification of G3P-dependent proteins and deciphering their role in plant systemic immunity " **(CoPI)**

2013-2016 Funded by SERB, Ministry of Science & Technology, Govt. of India, "Cloning and functional characterization of *Helicoverpa* -inducible hevein-like protein from chickpea" **[PI]**

2015-2016 Funded by UGC/DU " Comprehension of ethnic practices of selected Indian tribes as pro-ecological customs and their deviation from the stream " **(CoPI)**

2013-2014 Funded by SERB, DST " Critical and Scientific analysis on use of alternative medicines with practical approach and case studies" **[PI]**

Patent (1): **Indian Application No. 201911020282:** Method for identifying multidrug-resistant *Mycobacterium tuberculosis* strain (2019).

GenBank submissions:

Singh A, Singh IK**,** and Verma PK **2007.** Molecular responses of *Cicer arietinum* genes in response to biotic stress. **200 unique cDNA sequences** isolated by Suppression subtractive Library

Research Guidance:

Postdoctoral:

1. Dr. Sujata Singh, **2020-Contd. (NPDF)** in the project entitled "Proteomic analysis of herbivory induced defense response in *Zea mays* upon *Spodoptera litura* infestation".

Doctoral:

1. Ms. Manisha Yadav (Ph.D. expected 12/23): ***To decipher the role of Spodoptera litura inducible early responsive Calmodulin like proteins (CMLs) in Glycine max (Soybean)***
2. Ms. Ruby Panwar (Ph.D. expected 12/24): **Molecular analysis of *Systemic acquired resistance in Brassica juncea***

Junior Research Fellows:

1. ***Madhu*** *in the project "*Cloning and functional characterization of *Helicoverpa* -inducible hevein-like protein from chickpea"
2. ***Sanjay*** *in the project "*Cloning and functional characterization of *Helicoverpa* -inducible

hevein-like protein from chickpea"

3. ***Amit Kumar*** *in the project "*Functional analysis of *Spodoptera litura*-inducible calmodulin-like protein from *Glycine max"*

4. ***Jyotsna Pandey*** *in the project "*Functional analysis of *Spodoptera litura*-inducible calmodulin-like protein from *Glycine max"*

Progressive M.Sc. / B.Tech Training for a major / minor project:

1. ***Rahul Arora M.Sc. Intern*** *(2017):* Title of the project "*Expression analysis of MAPKs, MAPKKs and MAPKKKs in Cicer arietinum during biotic stress". for partial fulfiment of the award of* ***M.Sc. Bioinformatics.***

2. ***Radhika Keshan M.Sc. Intern*** *(2019):* Title of the project "Genome wide investigation of MAPKKKs from *Cicer arietinum* and their involvement in plant defense against *Helicoverpa armigera.".*

3. ***Mansi Taneja M.Sc. Intern (2021):*** Title of the project "Deciphering the Mitogen-activated Protein Kinase (MAPK) pathway in Plant Defense against Herbivory" for partial fulfillment of the award of the **M. Sc. Biotechnology (P.G. Dissertation)**

4. ***Harshita Saxena (2021) M.Sc. Intern****: Title of the project "*Genome Wide Analysis of Lipid Transfer Protein in Chickpea*"*

5. ***Harshita Negi (2021) M.Sc. Intern****: Title of the project "Allergenicity potential of* Lipid Transfer Proteins from Chickpea"

6. ***Renu Yadav M.Sc. Intern (2022, ongoing)****:* Title of the project "Heterologous expression and purification of GmCML protein from Chickpea" for partial fulfillment of the award of the degree **M. Sc. Microbiology (P.G. Dissertation).**

7. ***Shrishti Naidu M.Sc. Intern (2022, ongoing)****:* Title of the project "Silicon nanoparticles: Synthesis, Uptake and their role in Mitigation of Biotic and Abiotic stresses"

8. ***Mohini Kajila M.Sc. Intern (2022, ongoing):*** *Title of the project "Identification and characterization of Membrane ATPases in Glycine max****"***

9. **Kriti Singh (2014):** Title of the project "*Expression analysis of MAPKs, MAPKKs and MAPKKKs in Cicer arietinum during biotic stress". for partial fulfiment of the award of* ***B. Tech (Biotech****)*

10. **Sharad Iyer (2018):** Title of the project "*MAPKKKs in Cicer arietinum during biotic stress". for partial fulfiment of the award of* ***B. Tech (Biotech****)*

11. ***Diwakar (2018):*** *Title of the project "*Genome Wide Analysis of Lipid Transfer Protein in Soybean and Other Related Plants*" for partial fulfiment of the award of* ***B. Tech (Biotech****)*

12. ***Sharad Iyer (2018):*** *Title of the project "Genome Wide Analysis of Barwin Domain Containing proteins" for partial fulfiment of the award* ***B. Tech (Biotech****)*

13. ***Mansi Sharma (2020):*** *Title of the project "Study of Microbial Diversity of Soil at Delhi University Ridge"' for partial fulfiment of the award of* ***B. Tech (Biotech****)*

14. ***Nitesh Singh Parihar (2020):*** *Title of the project "Detection of Heavy Metal Toxicity at a site used for E-waste Disposal" for partial fulfiment of the award* ***B. Tech (Biotech****)*

15. ***Sharad (2020):*** *Title of the project "*Study of Microbial diversity of soil at a site used for E-waste disposal*" for partial fulfiment of the award of* ***B. Tech (Biotech****)*

16. ***Saurav Suman****: Title of the project "*E-waste In India: A Concern For Environment And Public Health"

17. **Diksha Bagal:** *Title of the project* "Biotic stresses on plants: reactive oxygen species generation and antioxidant mechanism*"*

18. **Sankritya Sarma**: *Title of the project "Potential Therapeutics against COVID-19"*

19. ***Aditya Pratap Singh (2022):*** *Title of the project "*Identification and characterization of Allergenic proteins from Chickpea*" for partial fulfiment of the award of* ***B. Tech (Biotech****)*

20. ***Saumya Dubey (2022)****: Title of the project "*Identification and characterization of Allergenic proteins from *Vigna mungo" for partial fulfiment of the award of* ***B. Tech (Biotech****)*
21. ***Lakshyant dubey(2022):*** *Title of the project* "PR-1proteins of Tomato: Defensins or allergens" for partial fulfiment of the award of B. Tech (Biotech)

22. ***Nishita*** *(2022, ongoing): Title of the project* "Identification of allergenic proteins from Tomato"

23. ***Yusuf*** *(2022, ongoing): Title of the project* "In silico analysis of predicted allergens from Tomato"

24. ***Chirag Dhankar*** *(2022, ongoing): Title of the project* "Identification of B-Cell Epitope binding sites in allergens from Tomato**"**

25. Undergraduate training of **20 students** under Innovation Projects.

Archana Singh

Curriculum Vitae July2022

Research Publications (as on 25/07/2022):

S. No.	h-index: 15 i10-index: 20 Total citations index: 1285*	Impact Factor
	PLANT PROTECTION	
1	Gupta OP, Singh AK, Singh **A, Singh** GP, Bansal KC and Datta SK (2022) Wheat Biofortification: Utilizing Natural Genetic Diversity, Genome-Wide Association Mapping, Genomic Selection, and Genome Editing Technologies. Front. Nutr. 9:826131. doi: 10.3389/fnut.2022.826131	**6.6**
2	**Singh, A*.,**Jain, D., Pandey, J., Yadav, M., Bansal, K.C. and Singh, I.K., 2022. Deciphering the role of miRNA in reprogramming plant responses to drought stress. *Critical Reviews in Biotechnology*, pp.1-15. ***Corresponding author.**	**8.429**
3	Yadav M, Pandey J, Chakraborty A, Hassan MI, Kundu JK, Roy A, Singh IK and **Singh A*** (2022) A Comprehensive Analysis of Calmodulin-Like Proteins of Glycine max Indicates Their Role in Calcium Signaling and Plant Defense Against Insect Attack. ***Front. Plant Sci.*** 13:817950. doi: 10.3389/fpls.2022.817950 ***Corresponding author**	**6.6272.7)**
4	**Singh, A.;** Mehta, S.; Yadav, S.; Nagar. G.; Ghosh, R.; Roy, A.; Chakraborty, A.; Singh, IK (2022). How to cope up with the challenges of environmental stresses in the era of global climate change?: An update on ROS stave off in plants. ***Int. J. Mol. Sci.*** **23(4):1995.**	**6.2**
5	Sharma A, Raina M, Kumar D, **Singh A,** Chugh S, Jain S, Kumar M, Rustagi A (2022) Harnessing phytomicrobiome signals for phytopathogenic stress management. ***Journal of Biosciences***, Springer, 47: 6.	**2.7**
6	**Singh A***, Singh S., Singh R., Kumar S., Singh S. K. and Singh I. K.* (**2021**) Dynamics of Zea *mays* transcriptome in response to a polyphagous herbivore, *Spodoptera litura*. ***Functional & Integrative Genomics*** 2021 Aug 20:1-22. ***Corresponding author**	**3.674**
7	Singh S, **Singh A#,** Baweja V, Roy A, Chakraborty A, Singh IK. Molecular Rationale of Insect-Microbes Symbiosis—From Insect Behaviour to Mechanism. ***Microorganisms*****.** 2021; 9(12):2422. **#First author as equal contributor**.	**4.926**
8	Keshan R., Singh R., Singh, I. K.*, and **Singh A*.** (**2021**) Genome wide investigation of MAPKKKs from *Cicer arietinum* and their involvement in plant defense against *Helicoverpa armigera*. ***Physiological and Molecular Plant Pathology*** 115:101685. ***Corresponding author**	**2.741**
9	**Singh, A.,** Tiwari, S., Pandey, J., Lata, C. and Singh, I.K., 2021. Role of nanoparticles in crop improvement and abiotic stress management. ***Journal of Biotechnology***. 337 (2021) 57–70.	**3.595**
10	**Singh, A.*,** Panwar, R., Mittal, P., Hassan, M.I. and Singh, I.K., 2021. Plant cytochrome P450s: Role in stress tolerance and potential applications for human welfare. ***International Journal of Biological Macromolecules*** 184 (2021) 874–886 . ***Corresponding author**	**8.025**

11	Mehta, S., Chakraborty, A, Roy, A, Singh I.K., **Singh A.*** (2021). Fight Hard or Die Trying: Current Status of Lipid Signaling during Plant–Pathogen Interaction. ***Plants***.10(6):1098**. *Corresponding author.**	**4.658**
12	**Singh, A.,** Singh, A., Kumar, A., Hartley, S. and Singh, I.K., 2020. Silicon: its ameliorative effect on plant defense against herbivory. ***Journal of Experimental Botany***, *71*(21), pp.6730-6743.	**7.298**
13	Singh, S., **Singh, A.*,** Kumar, S., Mittal, P. and Singh, I.K., (2020). Protease inhibitors: recent advancement in its usage as a potential biocontrol agent for insect pest management. ***Insect science***, 27 (2):186-201 ***Corresponding author.** (Selected as top cited article by Wiley)	**3.605**
14	Arora R., Kumar A., Singh I. K, **Singh, A.*,** (2020) Pathogenesis related proteins: A defensin for plants but an allergen for humans. ***International Journal of Biological Macromolecules***, 157:659-672. ***Corresponding author** (Highlighted in Current Science Journal)	**8.025**
15	Singh, S., Tyagi, C., Rather, I.A., Sabir, J. S. M., Hassan, M., I. **Singh, A. *,** and Singh, I. K. **(2020).** Molecular modeling of chemosensory protein 3 from *Spodoptera litura* and its binding property with plant defensive metabolites. ***International Journal of Molecular Sciences*** 21: 4073. ***Corresponding author**	**6.208**
16	**Singh, A.*,** Kumar, A., Yadav, S., and Singh, I. K. **(2019)** Reactive oxygen species-mediated signaling during abiotic stress. ***Plant Gene.*** 138(4):405-13. ***Corresponding author**	**3.2 (IF/CS)**
17	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	**4.380**
18	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***.	**3.2 (IF/CS)**
19	**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***, 113:869-880 ***Corresponding author**	**8.025**
20	**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: 231–243.	**8.025**
21	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.**	**1.58**

22	**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.	**9.1**
23	Tyagi, C., **Singh, A**. and Singh I. K. (**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***.	**3.737**
24	**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***.	**1.4**
25	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.	**--**
26	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.	**2.742**
27	Singh, I. K, **Singh, A**., Rai, P., and Mangangcha, I. R. (2011). Role of mitochondrial antioxidants in tolerance against radiation stress in plants. J ***Nat Sc Biol Med*** 2, Suppl S1: 156.	**0.672**
28	**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: 6.992).**	**7.2**
	Human Health	
29	Garima Nagar[1], Pooja Mittal[1], Shradheya R.R. Gupta[1], Monika Pahuja[2], Manisha Sanger[3], Ruby Mishra[4], Archana Singh[5*], Indrakant Kumar Singh[5*]. Multi-omics therapeutic perspective on ACVR1 gene: from genetic alterations to potential targeting. *Briefings in Functional Genomics* BFGP-22-0030.R1 (Accepted for publication)	**4.8**
30	Rustagi V, Bajaj M, Tanvi, Singh P, Aggarwal R, AlAjmi MF, Hussain A, Hassan MI, **Singh A*** and Singh IK (2022) Analyzing the Effect of Vaccination Over COVID Cases and Deaths in Asian Countries Using Machine Learning Models. ***Front. Cell. Infect. Microbiol.*** 11:806265. doi:10.3389/fcimb.2021.806265 ***Corresponding author**	**5.2**

31	Mittal, P., Singh, S., Sinha, R., Shrivastava, A., **Singh, A*.**, & Singh, I. K. (2021). Myeloid cell leukemia 1 (MCL-1): Structural characteristics and application in cancer therapy. ***International journal of biological macromolecules*****,** *187*, 999-1018. ***Corresponding author (IF: 6.95)**	**8.025**
32	Sharma PP, Kumar S, Kaushik K, **Singh A**, Singh IK, Grishina M, Pandey KC, Singh P, Potemkin V, Poonam, Singh G, Rathi (2021). In silico Validation of Novel Inhibitors of Malarial Aspartyl Protease, Plasmepsin V and Antimalarial Efficacy Prediction. ***J. Biomol. Struct. Dyn*** **5:1-13.**	**5.1**
33	Singh, I. K., Kumari, P., Mittal, P., Kumar, A., Singal, B., Hasan, G.M., Aggarwal, R., Kamal, M. A., **Singh, A.*** and Hassan, M.I. (2021) Emerging Therapeutic Approaches to COVID-19", ***Current Pharmaceutical Design*** 27 (31) :3370-3388. ***Corresponding author**	**2.2**
34	Verma, P., Mittal, P., **Singh, A.** *, and Singh, I. K. (2020). New Entrants into Clinical Trials for Targeted Therapy of Breast Cancer: An Insight**.** ***Anti-Cancer Agents in Medicinal Chemistry*** *19(18):2156-2176.* ***Corresponding author**	**2.505**
35	Kumari, P., **Singh A**[#], Ngasaina, M. R., Shakeel, S., Kumar, S., Lal, S., Singhal, A., Singh, Sohal, S. S. Singh, I. K.* and Hassan, M. I. (2020). Potential diagnostics and therapeutic approaches in COVID-19. ***Clinica Chimica Acta*****.** 510:488-497. [#]**Equally Contributed as first author**	**6.314**
36	Naqvi, A. A.T., Fatimab, K., Mohammada, T., Fatima, U., Singh, I. K., **Singh, A.,** Atiff, M. S., Hariprasad, G., Mustafa, G. H., and Hassan, M.I. **(2020)** Insights into SARS-CoV-2 genome, structure, evolution, pathogenesis, and therapies: Structural genomics approach. ***Biochimica et Biophysica Acta Molecular basis of disease,*** 1866(10): 165878.	**6.633**
37	Mittal, P., Sinha, R., Kumar, A., Singh, P., **Singh, A.,*** Ngasainao, M. R., and Singh, I. K.* (2020) Focusing on DNA Repair and Damage Tolerance mechanisms in Mycobacterium tuberculosis: an Emerging Therapeutic Theme. ***Current Topics In Medicinal Chemistry*** *20(5): 390-408*. ***Corresponding author**	**3.442**
38	Verma P, Hassan MI, **Singh A*,** and Singh IK (2021). Design and development of novel inhibitors of aldo-ketoreductase 1C1 as potential lead molecules in treatment of breast cancer. ***Molecular and Cellular Biochemistry***, 476(8):2975-2987. ***Corresponding author**	**3.842**
39	Mittal, P., Singh, S., Singh, A.* and Singh, I. K. (2020) Current advances in drug delivery systems for treatment of Triple-negative breast cancer (TNBC). ***Chemical Biology Letters****. 7(1): 1-12*. ***Corresponding author**	**--**
40	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.	**3.6**

41	Nath O, **Singh A**# and Singh I.K. (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 as first author**	**4.3**
42	Singh, A., Singal, B., 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***.	**2.894**
	Books	
43	**Singh, A.,** Rathi, B., Verma, A. K. and Singh, I.K. (2022) "Natural product based drug discovery against human parasites - Opportunities and challenges", 89164231, to be published from Springer-Nature (Under Production).	
44	Singh, I. K. and **Singh, A. (eds.) (2020)** "*Plants-Pest interactions: From molecular Mechanism to chemical ecology"* published from ***Springer*** eBook ISBN 978-981-15-2467-7; DOI 10.1007/978-981-15-2467-7.	-
45	**Singh A** and Singh I. K. **(eds.) (2018)** "*Molecular Aspects of Plant-Pathogen Interaction"* published from ***Springer DOI: 10.1007/978-981-10-7371-7(ISBN 978- 981-10-7370-0).***	-
	Book chapters	
46	Rustagi, V., Nagar, G., Mittal, P., **Singh, A**., Singh, I.K., **(2022)** Receptor tyrosine kinase- like orphan receptors ROR 1/2: Insights into the mechanism of action, inhibition, and therapeutic potential. https://doi.org/10.1016/B978-0-323-91287-7.00018-1	-
47	Karwal, P., Mittal, P., Nagar, G., **Singh, A**. and Singh I. K. (2022) Effects of pesticides on human physiology, genetics, and evolution. In book entitled "Emerging Contaminants in the Environment". DOI: https://doi.org/10.1016/B978-0-323-85160-2.00002-0 (Elsevier)	
48	Tripathi, C., Sharma,P., Singh I. K. and **Singh, A.** (2022). Integrative behavioral and ecotoxicological effects of nanoparticles.In book entitled "Emerging Contaminants in the Environment". DOI: https://doi.org/10.1016/B978-0-323-85160-2.00002-0 (Elsevier).	-
49	Mittal P., Singh I.K., **Singh, A**. (2021) Distinct Prognostic Values of *BCL2* Anti-apoptotic Members in Lung Cancer: An *In-Silico*Analysis. In R. P. Mondaini (ed.), Trends in Biomathematics: Chaos and Control in Epidemics, Ecosystems, and Cells, https://doi.org/10.1007/978-3-030-73241-7_22	-
50	Kumar A., Singh I.K., Mishra R., Singh A., Ramawat N., **Singh A***. (2021) The Role of Zinc Oxide Nanoparticles in Plants: A Critical Appraisal. In: Sharma N., Sahi S. (eds) Nanomaterial Biointeractions at the Cellular, Organismal and System Levels. Nanotechnology in the Life Sciences. Springer, Cham. https://doi.org/10.1007/978-3-030-65792-5_10	-
51	Suman S, Bagal D, Jain D, Singh R, Singh IK, **Singh A*.** Biotic stresses on plants: reactive oxygen species generation and antioxidant mechanism. In Frontiers in Plant-Soil Interaction 2021 Jan 1 (pp. 381-411). Academic Press (Elsevier)ISBN: 978-0-323-90943-3	-
52	Singh S., **Singh A*.,** Singh I.K. (2021) 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	
53	**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.	-
54	Rai S., Kumar A., Singh I K and **Singh A*.** (2021) Seed borne diseases and its management. In Tiwari A. K. (eds) Advances in Seed production and Management. Springer, Singapore.	-
55	Agrawal S, Panwar R., Kumar A, Singh I K and **Singh A*. (2021)** Seed infesting pests and their control strategies In Tiwari A. K. (eds) Advances in Seed production and Management. Springer, Singapore.	-
56	**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.	-
57	Kumar A, Panwar R, **Singh A*,** and Singh IK (2020) Role of Calcium Signalling During Plant-Herbivore Interaction. In B. Giri, M. P. Sharma (eds.), Plant Stress Biology, Springer, Singapore.	-
58	Mehta S, Gogna M, Singh B, Patra A, Singh IK, **Singh A*** (2020) Silicon: A Plant Nutritional "Non-Entity"for Mitigating Abiotic Stresses. In B. Giri, M. P. Sharma (eds.), Plant Stress Biology, Springer, Singapore.	-
59	Maurya A. K., and **Singh, A.** (2014) Global Environmental Issues and Sustainable Development In: Basic Environmetal Studies, (Eds.) Singh I. K. and Maurya A. K. Book Age Publications, New Delhi. pp. 131-152. ISBN: 978-9383281-41-1.	-
60	Maurya A. K., and **Singh, A.** (2014) Environmental Policies and Practices In: Basic Environmetal Studies, (Eds.) Singh I. K. and Maurya A. K. Book Age Publications, New Delhi. pp. 153-174. ISBN: 978- 9383281-41-1.	-
61	Maurya A. K., Monita and Singh, A. (2014) Field Work In: Basic Environmetal Studies, (Eds.) Singh I. K. and Maurya A. K. Book Age Publications, New Delhi. pp. 196-219. ISBN: 978-9383281-41-1.	-
62	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".	-
63	**Singh, A.** and Singh I. K. (2014) *"Molecular Basis of Inheritance*" (Unit 4) in the text book of XII for new CBSE-international (CBSE-i) which is available online for CBSE-i schools only".	-
64	**Singh, A.** and Singh I. K. (2014) "*Heredity and Variation*" (Unit 3) in the text book of XII for new CBSE-international (CBSE-i) which is available online for CBSE-i schools only".	-
	Popular Articles	
65	Sharma, S., **Singh, A*.,** and Arora, P. Potential Therapeutics against COVID-19. HANS SHODH SUDHA, Vol. 2, Issue 2, (2021), pp. 5-17	-
66	Suman, S., Malhotra, J., **Singh A*.,** E-waste in India: a concern for environment and public health. HANS SHODH SUDHA, Vol. 1, Issue 1, (2020), pp. 27-33	-
67	Singh, I.K. and **Singh, A**. (2008). The southern green stinkbug, Nezara viridula (L): A polyphagous pest. Agrobios Newsletter Vol. 6(8): 45-46.	-

Publications in Conference Proceedings

68. Yadav M, and **Archana Singh ***(2022) Proteomic analysis of Glycine max defense response induced by Spodoptera litura (Common cutworm) infestation in a national conference / workshop "WOST2022 Conference" entitled "**Empowering S&T with Women- A Step towards a New Era"** held at IIT Jodhpur on April 19-20, 2022

69. Megha Kumari, Indrakant K Singh and **Archana Singh***(2022) Comparative transcriptomic analysis of Zea mays defense response regulated by wounding and insect attack in a national conference / workshop "WOST2022 Conference" entitled "**Empowering S&T with Women- A Step towards a New Era"** held at IIT Jodhpur on April 19-20, 2022.

70. Nagar, G., Goswami, N., Mittal, P., Gupta, S. R. R., **Singh, A,** Singh, I. K. **(2022) "***Omics approach for screening, analysis, and predictional elucidation of deleterious missense mutation of ACVR1 gene*" in "2nd International RMBPD Colloquium" held on February, 24-25, 2022 organized by Department of Zoology, University of Delhi.

71. Goswami, N., Nagar, G., Gupta, S. R. R., Mittal, P., **Singh, A,** Singh, I. K. **(2022) "***Computational screening and in vitro analysis of therapeutic potential of phytochemicals in neuroblastoma disease***"** in "2nd International RMBPD Colloquium" held on February, 24-25, 2022 organized by Department of Zoology, University of Delhi.

72. Mittal, P., Gupta, S. R. R., Goswami, N., Nagar, G., **Singh, A.**, Singh, I. K. **(2022) "***Identification of Novel Myeloid Cell Leukemia 1 (MCL-1) Inhibitors: An Omics Perspective***"** in "2nd International RMBPD Colloquium" held on February, 24-25, 2022 organized by Department of Zoology, University of Delhi.

73. Gupta, S. R. R., Mittal, P., Nagar, G., Goswami, N., **Singh, A.,** Singh, I. K. **(2022) "***Using Microarray Data, Found Novel Link In the Hippo Pathway And Identified Cancer- Specific microRNAs To Cure Breast Cancer***"** in "2nd International RMBPD Colloquium" held on February, 24-25, 2022 organized by Department of Zoology, University of Delhi.

74. Taneja M., Singh I.K, **Singh. A** (2021) "Deciphering the MAPK Pathway in Plant Defense against herbivory" in an International conference on "Insect and Plant Biology 2021" held on October 7-8. 2021 organized by Hansraj College in association with Mahatma Hansraj Faculty Development Centre.

75. Yadav M., Pandey J., Singh I.K, **Singh. A** (2021) "A comprehensive analysis of calmodulin like proteins of Glycine max indicates their role in plant defense during herbivory and calcium signaling" in an International conference on "Insect and Plant Biology 2021" held on October 7-8. 2021 organized by Hansraj College in association with Mahatma Hansraj Faculty Development Centre.

76. Pandey J., Checker V. G., Ragini, Kumar Shantanu, Singh I.K, **Singh A** (2021) "Silicon-mediated heavy metal tolerance in crop plants" in an International conference on "Insect and Plant Biology 2021" held on October 7-8. 2021 organized by Hansraj College in association with Mahatma Hansraj Faculty Development Centre.

77. Keshan R., Singh I.K, **Singh A** (2021) "Identification and characterization of MAPKKs from *Cicer arietinum* and their involvement in plant defense against *Helicoverpa armigera"* in an International conference on "Insect and Plant Biology 2021" held on October 7-8. 2021 organized by Hansraj College in association with Mahatma Hansraj Faculty Development Centre.

78. Kumar S., Singh S., **Singh A.,** Singh I.K (2021) "A comparative transcriptome profiling of Spodoptera litura larval malpighian tubules upon feeding on a host and non-host plant" in an International conference on "Insect and Plant Biology 2021" held on October 7-8. 2021 organized by Hansraj College in association with Mahatma Hansraj Faculty Development Centre.

79. Negi H., Saxena H., Singh I.K, **Singh. A** (2021) "*In silico* characterization and allergenicity prediction of *Helicoverpa armigera*-inducible lipid transfer proteins (LTPs) from *Cicer arietinum*" in an International conference on "Insect and Plant Biology 2021" held on October 7-8. 2021 organized by Hansraj College in association with Mahatma Hansraj Faculty Development Centre.

80. Rustagi, V., Mittal, P., Nagar, G., **Singh, A**., Singh, I. K. **(2021*)*** *Distinct prognostic values of BCL-2 anti-apoptotic members in lung cancer: an in-silico analysis COVID-19 DEATH PREDICTION MODEL BASED UPON VACCINATION DOSES AND UPCOMING CASES* in **"21st BIOMAT International Symposium on Mathematical and Computational Biology"** held on November 1-5, 2021 organized by International Institute for Interdisciplinary Sciences.

81. Nagar, G., Goswami, N., Mittal, P., Gupta, S. R. R., **Singh, A**., Singh, I. K. **(2021)** "*IN SILICO ANALYSIS OF MISSENSE SNPS OF ACVR1 AND ITS ASSOCIATION WITH DIPG (DIFFUSE INTRINSIC PONTINE GLIOMA) AND ENDOMETRIAL CANCER"* in **"HEALTH 2021 "Cancer Biology: Advances and Challenges International Conference"** held on November 11-13, 2021 organized by Department of Zoology, Deshbandhu College, University of Delhi, India.

82. Goswami, N., Nagar, G., Gupta, S. R. R., Mittal, P., **Singh, A.,** Singh, I. K. **(2021)** "I*n silico screening of phytochemicals and assessing their chemotherapeutic potential using the in vitro assays"* in **"HEALTH 2021 "Cancer Biology: Advances and Challenges International Conference"** held on November 11-13, 2021 organized by Department of Zoology, Deshbandhu College, University of Delhi, India.

83. Gupta. S.R.R., Mittal. P., Nagar G., Goswami. N., **Singh. A.,** Singh, I. K. **(2021)** "I*dentification of cancer-specific differentially expressed microRNA and its target using text mining and microarray data"* in **"HEALTH 2021 "Cancer Biology: Advances and Challenges International Conference"** held on November 11-13, 2021 organized by Department of Zoology, Deshbandhu College, University of Delhi, India.

84. Mittal, P., Gupta, S. R. R., Goswami, N., Nagar, G., **Singh, A**., Singh, I. K. **(2021)** "*In silico analysis of the prognostic signature of mRNA expression of bcl2 family members in breast cancer"* in **"HEALTH 2021 "Cancer Biology: Advances and Challenges International Conference"** held on November 11-13, 2021 organized by Department of Zoology, Deshbandhu College, University of Delhi, India.

85. Singh I.K, Mittal. P, Nagar G, **Singh. A** (2021) "Gut microbiome, obesity, and colorectal cancer: A tripartite connection" in " 61st Annual conference of Association of microbiologists of India" held on February 3-5,2021.

86. Mittal, P., Singh, **A., Singh**, I. K.* (2020) Distinct prognostic values of BCL-2 anti-apoptoticmembers in lung cancer: an in-silico analysis in "20th BIOMAT International Symposium on Mathematical and Computational Biology" organized by International Institute for Interdisciplinary Sciences on November 1-6, 2020.

87. Keshan, R., Ragini, Singh I. K. * and **Singh A.*** (2020) Identification and characterization of MAPKKKs from Cicer arietinum and their involvement in plant defense against Helicoverpa armigera" in a National Virtual Conference on Current Trends and Challenges in Plant Biochemistry and Biotechnology (**CTCPBB 2020**) held on 20-21 November 2020 organized by BITS Pilani, K. K. Birla Goa Campus and The Society for Plant Biochemistry and Biotechnology

88. Ragini, Singh I. K. * and **Singh A.*** (2020). Differential expression of antioxidative enzymes during Arsenic toxicity in *Allium cepa*. in a National Virtual Conference on Current Trends and Challenges in Plant Biochemistry and Biotechnology (**CTCPBB 2020**) held on 20-21 November 2020 organized by BITS Pilani, K. K. Birla Goa Campus and The Society for Plant Biochemistry and Biotechnology

89. Mittal, P., **Singh, A.,** Singh, I. K. (2020) Distinct prognostic values of BCL-2 anti-apoptotic members in lung cancer: an in-silico analysis in "20th BIOMAT International Symposium on Mathematical and Computational Biology" organized by International Institute for Interdisciplinary Sciences on November 1-6,2020.

90. Nagar G, Mittal.P, **Singh, A.,** Singh, I. K.* (2020) Application of artificial intelligence for Drug Repositioning in Rare Human Disease in "First national e-conference on Äpplication of Mathematical Tools in Social sciences and Sciences" organized by Zakir Husain Delhi College, University of Delhi on October 17-18,2020.

91. Mittal. P, Nagar G, **Singh. A,** Singh, I. K.* (2020) Application of Mathematical models in cancer: Drug delivery, treatment, and prognosis in "First national e- conference on Äpplication of Mathematical Tools in Social sciences and Sciences" organized by Zakir Husain Delhi College, University of Delhi, New Delhi on October 17-18,2020.

92. Mittal. P, Singh. **A, Singh,** I. K.* (2020) Analysis of Myeloid cell leukemia 1 (MCL1) in Cancer: Genomic alterations, molecular mechanisms and regulation in International E-Conference and Hands on workshop on Health and Research in Current Scenario: With special emphasis on COVID-19 Virus Genomics and Pathogenicity from July 14-17,2020

93. 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 MNNIT Allahabad, Prayagraj, INDIA.

94. 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.

95. 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.

96. 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

97. 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.

98. 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.

99. 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.

100. 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

101. 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

102. 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.

103. 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.

104. **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.

105. 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.

106. **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.

107. 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.

108. **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

109. 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

110. **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.

111. 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.

112. 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.

113. 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.

114. 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.

115. 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.

116. 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.

117. **Singh A**, Singh, IK, Kawatra, V K 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.

118. **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.

119. 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.

120. 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.

121. 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.

Presentations at International Conferences/Meetings:

1. **Mar 11, 2017:** Maize Genetics International Conference, St. Louise, Missouri, USA

2. **Feb 4, 2017:** American Society of Plant Biologists (Annual Meeting), Purdue University, Indiana. US0A

3. **July 27, 2015:** "PLANT BIOLOGY 2015" (The Annual Meeting of the American Society of Plant Biologists) held at the Minneapolis Convention Center in Minneapolis, Minnesota USA

4. **Oct 26, 2010:** 7th Indo-Australia Biotechnology Conference, QIMR, Brisbane, Australia.

Profession Training/ Workshops/International Courses:

1. **Successfully completed** one week Faculty Development Program on "*Open Source Tools for Research*" Organized by Teaching Learning Center, Ramanujan College, University of Delhi (sponsored by Ministry of Human Resource Development, Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (8th June-14th June, 2020).

2. **Successfully completed** a One week Faculty Development Program on "*E-content generation and Managing Online Teaching"* Organized by Sri Aurobindo College, University of Delhi in collaboration with Mahatma Hansraj Faculty Development Centre, Hansraj College, University of Delhi (sponsored by Ministry of Human Resource Development, Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching)(11th -17th December, 2020)

3. **Successfully completed** in a Faculty Development Program on Environmental Impacts of Covid-19 Pandemic: Challenges and Future Research" Organized by University School of environment Management, Guru Gobind Singh Indraprastha University, Delhi (27th May-1st June, 2020)

4. **Successfully completed** a two day workshop on "Introductory Evolutionary and Phylogenetic Biology 2019" organized by Department of Botany, University of Delhi, Delhi.

5. **Successfully completed** 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.

6. **Successfully completed** 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.

7. **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.

8. **Successfully completed** a "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.

9. **Successfully Completed** a "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.

10. **Successfully Completed** "1st Plant Proteomics Workshop/ Training Program" December 26-30, 2013 Organized by Department of Botany, University of Delhi, New Delhi, India.

11. **Successfully Completed** a refresher course in: "Life Sciences / Biological Sciences / Bioinformatics" organized by CPDHE, University of Delhi (South Campus) from February 25th to March 16, 2013.

12. **Successfully Completed** "*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.

13. **Successfully Completed** "98th Orientation Programme" organized by UGC-ASC, Jamia Millia Islamia, New Delhi from 30th September to 1st November, 2011.

14. **Successfully Completed** 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.

15. **Successfully Completed** a National Workshop on "Evolutionary Perspectives in Modern Biological Teaching and Research", May 9-10, 2011 at University of Delhi, Delhi.

16. **Successfully Completed** 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.

17. **Successfully Completed** a "Workshop on "Biotechniques" From *January 11-13, 2002*, conducted by "Institute of Genomics and Integrated Biology (Formerly CBT)" University Campus, Mall Road, Delhi-110 007

Participation in Conferences/workshops

1. **Participated in** a webinar on "Tinkering with Plant Genomes" organized by Department of Botany, Miranda House, University of Delhi, on 06 July 2020

2. **Participated in** a webinar on "Symbiosis: When living together is a win-win" organized by the International Symbiosis Society on July 30, 2020

3. **Participated in** a webinar on "Evolution of science seen from historical perspective" organized by Department of Botany, Deshbandhu College, DU, under the aegis of IQAC on 12 th – 13 th May, 2020.

4. **Participated in** a panel discussion on "What makes a paper *really* pioneering ?" organized by Plantae Community, American Society of Plant Biology, USA on May 8, 2020.

5. **Participated in** a webinar on "Nomenclature Code and its Relevance to Fungi" organized by Department of Botany, Sri Aurobindo College on 4 th May, 2020

6. **Participated in** webinar series Alumni Association of JNU (AAJ) on *"Global Research Perspective to Pandemic Covid-19"* on June13, 2020

7. 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.

8. Participated in "**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**

9. Participated in "**INDO-HUNGARIAN SYMPOSIUM**" on Recent advances in Chemistry and Biology (INHCAB-2017) organized by Miranda House, DU.

10. 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.

11. "Attended a "**National Workshop**" organized by Grace India on "**How to get research papers published in Right Journals**", October 7, 2017.

12. 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.

13. 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.

14. 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.

15. 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

16. Attended a lecture on "**RNA Interference: Biology and Applications**" by Prof. M. V. Rajam, Professor, Department of Genetics, Delhi University, South Campus

17. Attended a "**National Symposium on Vector Biology and Vector Management**" June 21, 2013, Organized by Deshbandhu College, University of Delhi, New Delhi, India.

18. 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.

19. Attended an International symposium on **Microbial Biotechnology: Diversity, Genomics and Metagenomics**" held from 18th to 20th November, 2008 at University of Delhi, Delhi, India.

20. 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.

21. Attended a national seminar on "**Frontiers and Avenues in Plant Sciences 2011**" Shivaji College, University of Delhi.

22. 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.

23. Attended a national symposium on "**Frontiers in Plant Molecular Biology"**, September 27-28, 2013, organized by Department of PMB, University of Delhi.

Organizaation (Conference/workshop/ FDP)

1. Organized as a Convenor, an **International Conference on "Insect Plant Biology-2021"**, organized by Hansraj College in collaboration with Faculty Development Centre, Hansraj College, University of Delhi, from October, 7th -8th, 2021.

2. Organized as a Coordinator, a one-week faculty development program on "Computational approach to Drug Discovery" jointly organized by Deshbandhu College and Centre for Bioinformatics, computational and system biology (PRTF) in collaboration with Mahatma Hansraj Faculty Development Centre, Hansraj College (under PMMMNMTT scheme), University of Delhi from August 2 – 7, 2021.

3. Organized as a member, an **International Conference on "Genetics and Genomics Technologies for Crop Improvement"** organized by Department of Botany Hansraj College in collaboration with Faculty Development Centre, Hansraj College, University of Delhi from August 1-3, 2021

4. Organized as an advisory board member, an international conference on "Cancer BIOLOGY: Advances and Challenges" organized by Deshbandhu College, DU from Nov. 11 – 13, 2021.

5. Organized as a **Co convenor**, FDP entitled "Fundamentals of Intellectual Property Rights" organized by PMMMNMTT, Hansraj College, University of Delhi, 2020.

6. Organized as a **member** a national seminar **on "Environment and sustainability in the third world" at** Hansraj College, University of Delhi, 2020.

7. 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.

8. Organized as a **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

9. **Convened /organized** an FDP entitled "Agriculture, Science and Society" in collaboration with PMMMNMTT, Hansraj College, University of Delhi, 2019.

10. 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.

11. Organized as a **member** (**Organizing Committee member**), Indo-US Colloquium on Recent Developments in Interdisciplinary Sciences, 2nd July, 2018, at Hansraj College, DU.

12. **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.

13. Organized 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.

14. Organized 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.

15. **Organized as a Deputy Coordinator, INSPIRE Internship 2014 (DST, Govt. of India)** at Deshbandhu College, University of Delhi, from 17-21st December 2012.

16. **Organized as a Coordinator, INSPIRE Internship 2012 (DST, Govt. of India)** at Hansraj College, University of Delhi, from 17-21st December 2012.

Significant Contribution at College/University Level

- **Convenor, IIC-MHRD,** Hansraj College, DU, 2021-2022
- **Convenor,** Central Purchase Committee, Hansraj College, DU, 2020-23
- **Convenor, Committee 2,** RDC-HRC, 2022
- **Co-Convener,** Research Council, Hansraj College, DU, 2020-23
- **Superintendent,** Practical examination, Department of Botany, HRC, DU, 2021-22
- **Member IIC-MHRD,** Hansraj College, DU, 2020-2021
- **Member,** IQAC, Hansraj College, DU, 2020-21
- **Convenor,** Central Purchase Committee, Hansraj College, DU, 2019-20
- **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
- **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 Committee2012-2013
- **Member, I**nternal Assessment Committee 2012-13
- **Editor**, College Annual report (English) in the academic year 2012-13.
- **Member,** Development Fund Committee 2012-13
- **Superintendent,** 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

Resource Person / Jury Member :

1. **Member Jury** for INSPIRE Award in *"National level Exhibition and Project Competition (NLEPC)-2015"* held at IIT Delhi, organized by Department of Science & Technology, Govt. of India from December 7-8, 2015.

2. **Member jury** for INSPIRE Award in *"National level Exhibition and Project Competition (NLEPC)-2014"* by Department of Science & Technology, Govt. of India held at Pragati Maidan New Delhi Organized from October 6-8, 2014.

3. **Member Jury** for INSPIRE AWARD in *"National level Exhibition and Project Competition (NLEPC)-2012"* organized by DST Govt. of India. Pragati Maidan New Delhi from October 21-

23, 2012.

4. **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

5. **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.

6. **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

7. **Resource person** at Faculty Development Program on "Recent Trends in Bioinformatics" organized by DDU, University of Delhi

8. **Resource person** at Faculty Development Program on "Recent Trends in Bioinformatics" organized by DDU, University of Delhi

9. **Resource person / Material Developer** for BIOLOGY of International Curriculum- **CBSE-*I***

10. **Resource person / Ideator** of material production group for International Curriculum-**CBSE-*i***

Invited as speaker:

- Delivered an invited talk on "**Role of Reactive Oxygen Species in signaling during mitigation of biotic and abiotic stresses in the era of Global Climate Change**" in a Two Week Online Refresher Course in Environmental Studies on '21st Century Environmental Issues, Challenges and Solutions' organized by Teaching Learning Center (TLC), PMMMNMTT, Ramanujan College, DU; July, 2021.

- Delivered an invited talk on "**Structural Bioinformatics: Protein Modelling and Applications**" as a resource person in a workhop organized by Zakir Hussain College, DU; July 2021.

- Delivered an invited talk on "**My contribution and experiences during covid 19 lockdown period**" organized by Shakti, and Indraprastha Shakti a National Movement for Women , the women wing of Vijnana Bharati, on the occasion of International Day of Women and Girls in Science; Theme: Women Scientists at the forefront of fight against COVID-19; February 2021.

- 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.**

Special Recognitions:

- An article entitled ***"*Protease inhibitors: recent advancement in its usage as a potential biocontrol agent for insect pest management**" published in *Insect Science* was selected as top cited paper by **Wiley.**
- A research article entitled "**Pathogenesis Related Proteins: a defensin for plants but an allergen for humans"** was highlighted in Current Science (Vol. 119, No. 5, 10th Septemper 2020).

Editorial Board member of the following journals:

- Scientific Reports (Springer-*Nature*)
- Frontiers in Plant Sciences
- Guest Editor for the Topic "Calcium signaling: an early plant defense response against pests and pathogens" in Journal "Frontiers in Plant Sciences

National/International Scientific Services: **Membership Scientific Body:**

- Member, Royal Society of Biology, (**MRSB**) 2021
- Member, Society for Plant Biochemistry and Biotechnology
- Member of **American Society of Plant Biology.**
- Life Member of **Indian Biophysical Society**.
- Life Member of Association of **Indian Microbiologists of India.**

Invited Reviewers for the following International / National journals:

- Frontiers in Microbiology
- Frontiers in Plant Sciences
- FEBS OpenBio
- Arthropod Plant interactions
- Scientific Reports
- Bioengineering
- Genes
- IJTK (NISCAIR)
- Journal of Functional Foods (*Elsevier*)
- BMC Plant Biology (Bio Med Central)
- Current Bioinformatics (Bentham Sciences)
- Current Topics in Medicinal Chemistry (Bentham Sciences)
- Coronaviruses (Bentham Sciences)
- Plant Science today
- International Journal of Pure and Applied Zoology

-Dr. Archana Singh