
RANA MUHAMMAD ATIF

PERSONAL INFORMATION

Current Position: Associate Professor
University of Agriculture Faisalabad, Pakistan.
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Date of Birth: September 16, 1984
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LinkedIN [rana-muhammad-atif-12909830/](https://www.linkedin.com/in/rana-muhammad-atif-12909830/)
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ACADEMIC, RESEARCH & PROFESSIONAL EXPERIENCE

Visiting Scientist / Visiting Assistant Professor at Department of Plant Pathology, UC Davis, USA. (September 2023 – March 2024)

Incharge "Chickpea Biotechnology Lab" at Center for Advanced Studies in Agriculture & Food Security (CAS-AFS), University of Agriculture Faisalabad, Pakistan. (March 2015 – present).

Associate Professor at Department of Plant Breeding and Genetics, University of Agriculture Faisalabad, Pakistan. (November 2022 – present)

Visiting Scientist at Dr. Cook's "Feed the Future Innovation Lab for Climate Resilient Chickpea", Department of Plant Pathology, University of California, Davis, USA, (July 2016 – April 2017).

Assistant Professor in Department of Plant Breeding and Genetics, University of Agriculture Faisalabad, Pakistan. (August 2013 – October 2022).

Ph.D. Researcher (Research Associate in BARRANDE N° MEB021021) in *Plant Molecular Physiology team, Research unit of Genetics and Echo-Physiology of Grain Legumes*, INRA/AgroSup, Dijon, France (October 2009 – Feb 2013).

Master's researcher (Research Assistant in PeaStar E!4770) at *Research unit of Genetics and Echo-Physiology of Grain Legumes (UMRLEG)*, INRA, Dijon, France, (January 2009 – September 2009).

Internship at *Agri-Biotechnology Research Institute (ABRI), Ayub Agricultural Research Institute (AARI)*, Faisalabad, Pakistan, (March 2007 – June 2007)

EDUCATION

Ph.D. in Plant Molecular Biology & Biotechnology
(October 2009 – December 2012)

Institute: INRA / University of Burgundy, Dijon, France.

Thesis Title: Dissecting the factors controlling seed development in the model legume *Medicago truncatula*

Supervisor: Dr. Sergio J. Ochatt & Dr. Richard Thompson

Distinction: Très Honorable

M. Phil. (M2 Professional) in (Plant Biotechnology)

(September 2008 – September 2009)

Institute: INRA / University of Burgundy, Dijon, France.

Thesis Title: Embryo development and seed filling in pea: Towards the validation of gene function by TILLING mutant characterization and transgenesis

Supervisor: Dr. Sergio J. Ochatt

B.Sc. (Hons.) Agriculture (Plant Breeding and Genetics)

(October 2003 – July 2007)

Institute: University of Agriculture, Faisalabad, Pakistan.

Report Title: Acceleration of wheat breeding through the development of Wheat X Maize doubled haploids

Internship Supervisor: Dr. Javed Ahmad

F.Sc. (Pre-medical)

(August 2001 – August 2003)

Institute: Govt. College of Science, Samanabad, Faisalabad, Pakistan.

PUBLICATIONS (PEER-REVIEWED)

1. Jamil, S., Ahmad, S., Shahzad, R., Umer, N., Kanwal, S., Rehman, H.M., Rana, I.A. and Atif, R.M., 2024. Leveraging Multiomics Insights and Exploiting Wild Relatives Potential for Drought and Heat Tolerance in Maize. *Journal of Agricultural and Food Chemistry*, 72(29), pp.16048-16075.
2. Parveen, N., Atif, R.M., Sadaqat, H.A., Sadia, B. and Arif, A., 2024. Phenotypic and Molecular Characterization of *Ascochyta rabiei* Resistance in Pakistani Chickpea (*Cicer arietinum* L.) Germplasm. *Pakistan Journal of Agricultural Sciences*, 61(2).
3. Nawaz, M.A., Khalil, H.K., Azeem, F., Ali, M.A., Pamirsky, I.E., Golokhvast, K.S., Yang, S.H., Atif, R.M. and Chung, G., 2024. In Silico Comparison of WRKY Transcription Factors in Wild and Cultivated Soybean and Their Co-expression Network Arbitrating Disease Resistance. *Biochemical Genetics*, pp.1-23.
4. Ali, M.U., Rajput, N.A., Atiq, M., Atif, R.M. and Crandall, S.G., 2024. Population dynamics and aggressiveness of fungal pathogens associated with Chilli root rot. *Pak. J. Bot*, 56(1), pp.377-387.
5. Shaban, M., Tabassum, R., Rana, I.A., Atif, R.M., Azmat, M.A., Iqbal, Z., Majeed, S. and Azhar, M.T., 2024. Comparative analysis of SIMILAR to RCD ONE (SRO) family from tetraploid cotton species and their diploid progenitors depict their significance in cotton growth and development. *Journal of Cotton Research*, 7(1), pp.1-13.
6. Shahzaib, M., Khan, U. M., Azhar, M. T., Atif, R. M., Khan, S. H., Zaman, Q. U., & Rana, I. A. 2024. Phylogenomic curation of Ovate Family Proteins (OFPs) in the U's Triangle of Brassica L. indicates stress-induced growth modulation. *Plos one*, 19(1), e0297473.
7. Zafar, U.B., Shahzaib, M., Atif, R.M., Khan, S.H., Niaz, M.Z., Shahzad, K., Chughtai, N., Awan, F.S., Azhar, M.T. and Rana, I.A., 2023. De novo transcriptome assembly of *Dalbergia sissoo* Roxb.(*Fabaceae*) under *Botryodiplodia theobromae*-induced dieback disease. *Scientific Reports*, 13(1), p.20503.
8. Akhtar, M. A., Aslam, M., Schafleitner, R., Atif, R. M., & Murtaza, G. (2023). Genetics of cercospora leaf spot resistance in mung bean. *SABRAO J. Breed. Genet*, 55(4), 1109-1122.
9. Ahmad N, Fatima S, Mehmood M.A., Zaman Q.U., Atif R.M., Zhou W, Rahman M-u and Gill R.A. (2023) Targeted genome editing in polyploids: lessons from Brassica. *Front. Plant Sci.* 14:1152468.

10. Shaheen, N., Khan, U.M., Farooq, A., Zafar, U.B., Khan, S.H., Ahmad, S., Azhar, M.T., Atif, R.M., Rana, I.A. and Seo, H., 2023. Comparative transcriptomic and evolutionary analysis of FAD-like genes of Brassica species revealed their role in fatty acid biosynthesis and stress tolerance. *BMC Plant Biology*, 23(1), pp.1-13.
11. Raza, Q., Rashid, M.A.R., Waqas, M., Ali, Z., Rana, I.A., Khan, S.H., Khan, I.A., and Atif, R.M., 2023. Genomic diversity of aquaporins across genus *Oryza* provides rich genetic resource for rich genetic resource for development of climate resilient rice cultivars. *BMC Plant Biol* 23, 172.
12. Khan, U.M., Rana, I.A., Shaheen, N., Raza, Q., Rehman, H.M., Maqbool, R., Khan, I.A. and Atif, R.M (2023) Comparative phylogenomic insights of *KCS* and *ELO* gene families in *Brassica* species indicate their role in seed development and stress responsiveness. *Sci Rep* 13, 3577.
13. Tabassum J, Raza Q, Riaz A, Ahmad S, Rashid MAR, Javed MA, Ali Z, Kang F, Khan IA, Atif RM and Luo J (2022) Exploration of the genomic atlas of Dof transcription factor family across genus *Oryza* provides novel insights on rice breeding in changing climate. *Front. Plant Sci.* 13:1004359.
14. Akhtar MA, M Aslam, R Schafleitner, RM Atif, G Murtaza (2022). Association mapping for 100 seed weight in mungbean (*Vigna radiata*) minicore. *Intl J Agric Biol* 28:375–382.
15. Khalid, M., Rehman, H.M., Ahmed, N., Nawaz, S., Saleem, F., Ahmad, S., Uzair, M., Rana, I.A., Atif, R.M., Zaman, Q.U. and Lam, H.M., 2022. Using Exogenous Melatonin, Glutathione, Proline, and Glycine Betaine Treatments to Combat Abiotic Stresses in Crops. *International Journal of Molecular Sciences*, 23(21), p.12913.
16. Rehman, H.M., Khan, U.M., Nawaz, S., Saleem, F., Ahmed, N., Rana, I.A., Atif, R.M., Shaheen, N. and Seo, H., 2022. Genome Wide Analysis of Family-1 UDP Glycosyltransferases in *Populus trichocarpa* Specifies Abiotic Stress Responsive Glycosylation Mechanisms. *Genes*, 13(9), p.1640.
17. Rashid MAR, Atif R.M., Zhao Y, Azeem F, Ahmed HGM, Pan Y, Li D, Zhao Y, Zhang Z, Zhang H, Li J, Li Z. 2022. Dissection of genetic architecture for tiller angle in rice (*Oryza sativa*. L) by multiple genome-wide association analyses. *PeerJ*, 10, p.e12674.
18. Aleem, M.; Aleem, S.; Sharif, I.; Wu, Z.; Aleem, M.; Tahir, A.; Atif, R.M.; Cheema, H.M.N.; Shakeel, A.; Lei, S.; Yu, D.; Wang, H.; Kaushik, P.; Alyemini, M.N.; Bhat, J.A.; Ahmad, P. 2022. Characterization of SOD and GPX Gene Families in the Soybeans in Response to Drought and Salinity Stresses. *Antioxidants*, 11, 460. <https://doi.org/10.3390/antiox11030460>
19. Raza Q, Riaz A, Atif R.M., Hussain B, Rana IA, Ali Z, Budak H and Alaraidh IA. 2022 Genome-Wide Diversity of MADS-Box Genes in Bread Wheat is Associated with its Rapid Global Adaptability. *Front. Genet.* 12:818880.
20. Aleem, M., Riaz, A., Raza, Q., Aleem, M., Aslam, M., Kong, K., Atif, R.M., Kashif, M., Bhat, J.A. and Zhao, T., 2022. Genome-wide characterization and functional analysis of class III peroxidase gene family in soybean reveal regulatory roles of GsPOD40 in drought tolerance. *Genomics*. Volume 114, Issue 1, January 2022, Pages 45-60.
21. Shahzad, R., Jamil, S., Ahmad, S., Nisar, A., Amina, Z., Saleem, S., Iqbal, M.Z., Atif, R.M. and Wang, X., 2021. Harnessing the potential of plant transcription factors in developing climate resilient crops to improve global food security: Current and future perspectives. *Saudi journal of Biological SSciences*, 28(4), pp.2323-2341.
22. Azhar, M.T., Atif, R.M., Israr, M., Khan, A.I., Khalid, S. And Rana, I.A., 2021. A discussion on cotton transformation during the last decade (2010–2021); an update on present trends and future prospects. *Journal of Cotton Research*, 4(1), pp.1-14.
23. Majeed, S., Rana, I.A., Mubarik, M.S., Atif, R.M., Yang, S.H., Chung, G., Jia, Y., Du, X., Hinze, L. and Azhar, M.T., 2021. Heat Stress in Cotton: A Review on Predicted and

- Unpredicted Growth-Yield Anomalies and Mitigating Breeding Strategies. *Agronomy*, 11(9), p.1825.
24. Shaheen, N., Khan, U.M., Azhar, M.T., Tan, D.K., Atif, R.M., Israr, M., Yang, S.H., Chung, G. and Rana, I.A., 2021. Genetics and genomics of Fusarium wilt of chilies: A review. *Agronomy*, 11(11), p.2162.
 25. Zafar, Z.; Rasheed, F.; Atif, R.M.; Javed, M.A.; Maqsood, M.; Gailing, O. (2021) Foliar Application of Salicylic Acid Improves Water Stress Tolerance in *Conocarpus erectus* L. and *Populus deltoides* L. Saplings: Evidence from Morphological, Physiological and Biochemical Changes. *Plants*, 10, 1242. <https://doi.org/10.3390/plants10061242>
 26. Mariyam, Shafiq, M., Haseeb, M., Atif, R.M., Naqvi, S.A.A.A., Ali N., Javed, M.A., Gillani, F., & Haider, M.S. (2021) Genome-wide identification and characterization of a plant-specific Dof transcription factor gene family in olive (*Olea europaea*) and its comparison with Arabidopsis. *Hortic. Environ. Biotechnol.* 62(6), pp.949-968.
 27. Zafar, Z.; Rasheed, F.; Atif, R.M.; Maqsood, M.; Gailing, O. (2021) Salicylic acid-induced morpho-physiological and biochemical changes triggered water deficit tolerance in *Syzygium cumini* L. saplings. *Forests*, 12(4), 491.
 28. Arif A, Parveen N, Waheed MQ, Atif RM, Waqar I and Shah TM (2021). A comparative study for assessing the drought-tolerance of chickpea under varying natural growth environments. *Front. Plant Sci.* 11:607869.
 29. Azhar, M.T., Atif, R.M., Israr, M., Khan, A.I., Khalid, S. And Rana, I.A., 2021. A discussion on cotton transformation during the last decade (2010–2021); an update on present trends and future prospects. *Journal of Cotton Research*, 4, pp.1-14.
 30. Ahmed, S., Rashid, M.A.R., Zafar, S.A., Waqas, M., Uzair, M., Azhar, M.T., Rana, I.A., Azeem, F., Chung, G., Ali, Z. and Atif, R.M., 2021. Genome-wide investigation and expression analysis of APETALA-2 transcription factor subfamily reveals its evolution, expansion and regulatory role in abiotic stress responses in Indica Rice (*Oryza sativa* L. ssp. *indica*). *Genomics*. Volume 113, Issue 1, Part 2, January 2021, Pages 1029-1043
 31. Nawaz, M.A., Azeem, F., Zakharenko, A.M., Lin, X., Atif, R.M., Baloch, F.S., Chan, T.-F., Chung, G., Ham, J., Sun, S., Golokhvast, K.S. 2020 In-silico exploration of Channel Type and Efflux Silicon transporters and silicification proteins in 80 sequenced *Viridiplantae* genomes. *Plants* 2020, 9, 1612.
 32. Aleem, M., Raza, M. M., Haider, M. S., Atif, R. M., Ali, Z., Bhat, J. A., & Zhao, T. 2020. "Comprehensive RNA-seq analysis revealed molecular pathways and genes associated with drought tolerance in Wild Soybean (*Glycine soja* Sieb. & Zucc)." *Physiologia Plantarum* (2020). ;172:707–732.
 33. Rehman, A., Atif, R.M., Qayyum, A., Du, X., Hinze, L. and Azhar, M.T., 2020. Genome-wide identification and characterization of HSP70 gene family in four species of cotton. *Genomics* 112 (6), pp.4442-4453.
 34. Chattha, W.S., Atif, R.M., Iqbal, M., Shafqat, W., Farooq, M.A. and Shakeel, A., 2020. Genome-wide identification and evolution of Dof transcription factor family in cultivated and ancestral cotton species. *Genomics*, 112 (6), pp.4155-4170.
 35. Rajput, N.A., Hussainullah, Huo, C., Cao, J., Atiq, M., Atif, R.M., Lodhi, A.M., Syed, R.N., Sarfraz, S., Hameed, A., Zhao, Z., 2020. First report of *Curvularia verruculosa* causing leaf spot disease of grape (*Vitis vinifera*) in Afghanistan. *Journal of Plant Pathology*. doi:10.1007/s42161-020-00625-z
 36. Ahmad, B., Azeem, F., Ali, M.A., Nawaz, M.A., Abbas, A., Nadeem, H., Batool, R., Atif, R.M., Ijaz, U., Cordone, M.N. and Chung, G., 2020. Genome-wide identification and expression analysis of two component system genes in *Cicer arietinum*. *Genomics*, 112(2), pp.1371-1383.
 37. Babar, U., Nawaz, M.A., Arshad, U., Azhar, M.T., Atif, R.M., Golokhvast, K.S., Tsatsakis, A.M., Shcherbakova, K., Chung, G. and Rana, I.A., 2020. Transgenic crops for the

- agricultural improvement in Pakistan: a perspective of environmental stresses and the current status of genetically modified crops. *GM Crops & Food*, 11(1), pp.1-29.
38. Atif, R.M., Shahid, L., Waqas, M., Ali, B., Rashid, M.A.R., Azeem, F., Nawaz, M.A., Wani, S.H. and Chung, G., 2019. Insights on calcium-dependent protein kinases (CPKs) signaling for abiotic stress tolerance in plants. *International Journal of Molecular Sciences*, 20(21), p.5298.
 39. Raza, Q., Riaz, A., Sabar, M., Atif, R.M. and Bashir, K., 2019. Meta-analysis of Grain Iron and Zinc Associated QTLs Identified Hotspot Chromosomal Regions and Positional Candidate Genes for Breeding Biofortified Rice. *Plant Science*, 288, p.110214.
 40. Nawaz MA, TF Chan, HM Rehman, X Lin, MA Ali, FS Baloch, RM Atif, M Imtiaz, SH Yang, G Chung. 2019. Characterization of Cellulose Synthase A (CESA) Gene Family in Eudicots. *Biochemical Genetics*. 57(2), 248-272.
 41. Attique SA, M Hassan, M Usman, RM Atif, S Mahboob, K A. Al-Ghanim, M Bilal and MZ Nawaz. 2019. A Molecular Docking Approach to Evaluate the Pharmacological Properties of Natural and Synthetic Treatment Candidates for Use against Hypertension. *International Journal of Environmental Research and Public Health*, 16(6), 923.
 42. Ali, Z., Raza, Q., Atif, R.M., Aslam, U., Ajmal, M. and G. Chung. 2019. Genetic and Molecular Control of Floral Organ Identity in Cereals. *International Journal of Molecular Sciences*, 20(11), p.2743.
 43. Azeem F, B Ahmed, RM Atif, MA Ali, H Nadeem, S Hussain, S Rasul, H Manzoor, U Ahmad and M Afzal. 2019. Drought affects aquaporins gene expression in important pulse legume chickpea (*Cicer arietinum* L.). *Pakistan Journal of Botany*, 51(1), 81-88.
 44. Majeed S, IA Rana, RM Atif, Z Ali, L Hinze, MT Azhar. 2019. Role of SNPs in determining QTLs for major traits in cotton. *Journal of Cotton Research*, 2(1), p.5.
 45. Farooq MA, MA Shakeel, RM Atif and MF Saleem. 2019. Genotypic Variations in Salinity Tolerance among BT-Cotton. *Pakistan Journal of Botany*. 51(6).
 46. Aslam, S., Khan, S.H., Rana, I.A. and Atif, R.M. 2019. Development of Founder Lines for Recombinase based Gene Targeting in *Nicotiana banthamiana*. *International Journal of Agriculture and Biology*, 21(2), pp.429-436.
 47. Waqas M, MT Azhar, IA Rana, F Azeem, MA Ali, MA Nawaz, G Chung and RM Atif. 2019. Genome-wide identification and expression analysis of WRKY transcription factor family from chickpea (*Cicer arietinum* L.) reveal their role in abiotic stress tolerance. *Genes and Genomics*. 41:467-481
 48. Farooq MA, A Shakeel, RM Atif and MF Saleem. 2018. Genetic variability studies for salinity tolerance in *Gossypium hirsutum*. *International Journal of Agriculture and Biology*. 18-0359/2018/20-12-2871-2878.
 49. Azeem F, B Ahmad, RM Atif, MA Ali, H Nadeem, S Hussain, H Manzoor, M Azeem and M Afzal. 2018. Genome-wide analysis of potassium transport-related genes in chickpea (*Cicer arietinum* L.) and their role in abiotic stress responses. *Plant Molecular Biology Reporter*, 36(3), 451-468.
 50. Shah ZH, Rehman HM, Daur I, Nawaz MA, Ahmad MQ, Rana IA, Atif RM, Yang SH, Chung G. 2017. Redox and ionic homeostasis regulations against oxidative, salinity and drought stress in wheat (A Systems Biology Approach). *Frontiers in Genetics*. 8:141.
 51. Akbar W, M Aslam, RM Atif and MS Nawaz-ul-Rehman. 2017. Exploration of durable resistance in mungbean against Mungbean Yellow Mosaic Disease. *Pakistan Journal of Agricultural Sciences*, Vol. 54(2), 415-422.
 52. Rasul, I., Nadeem, H., Siddique, M.H., Atif, R.M., Ali, M.A., Umer, A., Rashid, F., Afzal, M., Abid, M. and Azeem, F., 2017. Plants sensory-response mechanisms for salinity and heat stress. *JAPS: Journal of Animal & Plant Sciences*, 27(2).
 53. Ali MA, KB Alia, RM Atif, I Rasul, HU Nadeem, A Shahid, And F Azeem. 2017. Genome-wide identification and comparative analysis of Squamosal-Promoter Binding Proteins

- (SBP) transcription factor family in *Gossypium raimondii* and *Arabidopsis thaliana*. *Pakistan Journal of Botany*, 49(3): 1113-1126.
54. Kaleem, M.N., Rana, I.A., Shakeel, A., Hinze, L.L., RM Atif, Azhar, M.T. 2016. Genetic analysis of some agronomic and fiber traits in *Gossypium hirsutum* L. grown in field conditions. *Turkish Journal of Field Crops*. 21(2):240-245.
 55. Zafar S.A, S. Shokat, H.G.M. Ahmed, A. Khan, M.Z. Ali and RM Atif. 2015. Assessment of salinity tolerance in rice using seedling based morpho-physiological indices. *Advancements in Life Sciences*. 2(4), 142-149.
 56. Atif R.M., F Boulisset, C Conreux, R Thompson & S Ochatt. 2013. *In vitro* auxin treatment promotes cell division and delays endoreduplication in developing seeds of the model legume species *Medicago truncatula*. *Physiologia Plantarum*, 148, 549-559.
 57. Noguero M., RM Atif, SJ Ochatt S. J. and RD Thompson. 2013. The role of the DNA-binding One Zinc Finger (DOF) transcription factor family in Plants. *Plant Science*, 209, 32-45.
 58. Ochatt S.J., RM Atif, EM Patat-Ochatt, L Jacas, and C Conreux. 2010. Competence versus Recalcitrance for in Vitro Regeneration. *Notulae Botanicae Horti Agrobotanici Cluj-Napoca*. 38, 102-108.

BOOK EDITED

1. Azhar M.T., M.Q. Ahmad, I.A. Rana, R.M. Atif. (Eds) 2023 Biofortification of Grain and Vegetable Crops - Molecular and Breeding Approaches. Academic Press, Elsevier. (Paperback ISBN: 978-0-323-91735-3) (eBook ISBN: 978-0-323-97214-7)

BOOK CHAPTERS

1. Shahzad R., S. Jamil, G. T. G. Alsubaie, S. Ahmad, A. Nisar, S. U. Rahman, I. Ahmad, R. M. Atif. 2025. CRISPR-Cas-mediated genome editing in maize – present, past, and future. In: Ahmad S., A. A. Khan & M. A. Javed (Eds) CRISPR-Based Gene Editing (pp. 27). Apple Academic Press. (ISBN: 9781032712147)
2. Raza Q., M. T. Azhar, I. A. Rana, M. Q. Ahmad, R. M. Atif. 2024. Biofortification of crops to achieve food and nutritional security. In: Azhar M. T., M. Q. Ahmad, I. A. Rana & R. M. Atif (Eds) Biofortification of Grain and Vegetable Crops (pp. 19-37) Academic Press (ISBN: 9780323917353)
3. Rasheed A. A., Q. Raza, M. Waqas, M. Shaban, M. A. Asad, R. M. Atif. 2024. Biofortification of chickpea: genetics, genomics, and breeding perspectives. In: Azhar M. T., M. Q. Ahmad, I. A. Rana & R. M. Atif (Eds) Biofortification of Grain and Vegetable Crops (pp. 19-37) Academic Press. (ISBN: 9780323917353)
4. Shaheen N., M. Shahzaib, U. M. Khan, H. M. Rehman, R. M. Atif, M. T. Azhar, A. I. Khan & I. A. Rana. 2024. Genetically modified organisms for crop biofortification. In: Azhar M. T., M. Q. Ahmad, I. A. Rana & R. M. Atif (Eds) Biofortification of Grain and Vegetable Crops (pp. 19-37) Academic Press. (ISBN: 9780323917353)
1. Raza, Q., Sabar, M., Rashid, M.A.R. and Atif, R.M., 2023. Translating genetics into genomics: From QTL identification to candidate gene discovery in rice. In: Wani S.H., D. Wang and G.P. Singh (eds) QTL Mapping in Crop Improvement (pp. 257-273). Academic Press, Elsevier. (ISBN: 978-0-323-85243-2)
2. Hussain, B., Raza, Q., Atif, R.M., Ahmad, M.Q. 2022. New Breeding Techniques (NBTs) and Biotechnology for Boosting Rice Grain Yield to Feed 5 Billion in 2050. In: Sarwar, N., Atique-ur-Rehman, Ahmad, S., Hasanuzzaman, M. (eds) Modern Techniques of Rice Crop Production (pp 681–700). Springer, Singapore. (ISBN: 978-981-16-4954-7)

3. Shahzad, R., Jamil, S., S. Ahmad, A. Nisar, S. Kanwal, R. M. Atif, M. Z. Iqbal, Z. Ali, A. I. Ghazy and A. A. Khan. (2021) Omics approaches for improving abiotic stress tolerance in rice: recent advances and future prospects. In: Aftab T. and K.R. Hakeem (eds). *Frontiers in Plant Soil Interaction - Molecular Insights into Plant Adaptation*. (pp. 199-220). Academic Press. Elsevier. (ISBN: 978-0-323-90943-3)
4. Ahmad, S., Shahzad, R., Jamil, S., Tabassum, J., Chaudhary, M.A.M., R. M. Atif, Iqbal, M.M., Monsur, M.B., Lv, Y., Sheng, Z. and Ju, L., (2021) Regulatory aspects, risk assessment, and toxicity associated with RNAi and CRISPR methods. In: Abd-Elsalam K. A and K-T Lim (eds.), *CRISPR and RNAi Systems: Nanobiotechnology Approaches to Plant Breeding and Protection*. (pp. 687-721). Academic Press. Elsevier. (ISBN: 978-0-12-821910-2)
5. Bakir M., D. Sari, H. Sari, M. Waqas and R. M. Atif. (2021) Chickpea wild relatives: potential source of ancient genes for stress tolerance breeding. In: Azhar M. T, and S. H. Wani (eds.), *Wild Germplasm for Genetic Improvement in Crop Plants*. Academic Press Elsevier. P 269-297. (ISBN 978-0-12-822137-2)
6. Asghar M. J., A. Hameed, M. Rizwan, M. Shahid and R. M. Atif. (2021) Lentil Wild genetic resource; a potential source of genetic improvement for abiotic and biotic stress tolerance. In: Azhar M. T, and S. H. Wani (eds.), *Wild Germplasm for Genetic Improvement in Crop Plants*. Academic Press Elsevier. P 321-341. (ISBN 978-0-12-822137-2)
7. Qandeel-e-Arsh, Tehreem Jabbar, Shahzad Khalid, Rana Muhammad Atif, Hafiz Mamoon Rehman and Iqrar Ahmad Rana. *Wild Relative Species and new plant breeding technologies*. In: Azhar M. T, and S. H. Wani (eds.), *Wild Germplasm for Genetic Improvement in Crop Plants*. Academic Press Elsevier. P 343-371. (ISBN 978-0-12-822137-2)
8. Saleem S., A. Bari, B. Abid, M. T. Qamar, R. M. Atif & M. S. Khan. (2020) QTL Mapping for Abiotic Stresses in Cereals. In: Fahad S., M. Hasanuzzaman, M. Alam, H. Ullah, M. Saeed, I. A. Khan & M. Adnan (eds.), *Environment, Climate, Plant and Vegetation Growth*. Springer Nature Switzerland. (ISBN 978-3-030-49731-6)
9. Waqas M., L. Shahid, K. Shoukat, U. Aslam, F. Azeem & R.M. Atif. (2020) Role of DNA-binding with one finger (Dof) transcription factors for abiotic stress tolerance in plants. In: S.H. Wani (ed.), *Transcription Factors for Abiotic Stress Tolerance in Plants* (pp. 1-14). Academic Press Elsevier. (ISBN 978-0-12-819334-1)
10. Waqas M., M.T. Azhar, I.A. Rana, A. Arif & R.M. Atif. (2019) Drought stress in Chickpea: Physiological, Breeding and Omics perspectives. In: S.H. Wani (ed.), *Recent Approaches in Omics for Plant Resilience to Climate Change* (pp. 189-227). Springer-Nature. (ISBN 978-3-030-21687-0)
11. Zafar S., A. Iqbal, M.T. Azhar, R.M. Atif, I.A. Rana, H.M. Rehman, M.A. Nawaz & G. Chung (2019). GM Maize for Abiotic Stresses: Potentials and Opportunities. In: S.H. Wani (ed.), *Recent Approaches in Omics for Plant Resilience to Climate Change* (pp. 229-249). Springer-Nature. (ISBN 978-3-030-21687-0)
12. Salman M., S. Majeed, I.A. Rana, R.M. Atif & M.T. Azhar. (2019) Novel Breeding and Biotechnological Approaches to Mitigate the Effects of Heat Stress on Cotton. In: S.H. Wani (ed.), *Recent Approaches in Omics for Plant Resilience to Climate Change* (pp. 251-277). Springer-Nature. (ISBN 978-3-030-21687-0)
13. Babar, U., Arshad, U., Azhar, M.T., Atif, R.M., Alsahli, A.A., Alaraidh, I.A., Kiran, A., Rana, I.A. and Chung, G., (2019). Wheat in the Era of Genomics and Transgenics. In Shah, F., Khan, Z., Iqbal, A., Turan, M., & Olgun, M. (Eds.) *Recent Advances in Grain Crops Research*. IntechOpen. (ISBN: 978-1-78985-450-3)
14. Azeem F., M.J. Bilal, U. Ijaz, M. Zubair, I. Rasul, M.J. Asghar, G. Abbas, R.M. Atif & A. Hameed. (2019) Recent Advances in Breeding, Marker Assisted Selection and Genomics of Black Gram [*Vigna mungo* (L.) Hepper]. In: Al-Khayri J., J. S. Mohan, Johnson, Dennis

- V. (eds.) *Advances in Plant Breeding Strategies*, Vol V Cereals and Legumes. Springer. (ISBN 978-3-030-23400-3)
15. Khan A.A., Z. Ali, R.M. Atif & H. Ma. (2018) Tissue Culture Breeding. In: Khan A.S., Z Ali and N. Islam (eds.) *Plant Breeding*. (ISBN 978-969-8237-94-3)
 16. Atif R. M., Patat-Ochatt E. M., Svabova L., Ondrej V., Klenoticova H., Jacas L., Griga M. & Ochatt S. J. (2013) Gene transfer in legumes. In: Lüttge, U.; Beyschlag, W.; Francis, D.; Cushman, J. (Eds.) *Progress in Botany 74*. Springer-Verlag, Berlin, Heidelberg p. 37-100. (ISBN: 978-3-642-30966-3)

ORAL / POSTER PRESENTATIONS/ABSTRACTS IN PROCEEDINGS/CONFERENCES

1. Raza, Q., Riaz, A., Ahmad, S., Rashid, M.A.R., Khan, I.A., and Atif, R.M. (2022). Genomic atlas of DOF family across genus *Oryza*. Cold Spring Harbour Laboratory meeting on "Biology of Genomes" May 10-14, 2022, USA.
2. Raza, Q. Riaz, A., Atif, M.A., Hussain, B., Ali, Z., and Budak, H. 2021. MADS-box Genes Galore in Wheat Genome: New Insights into Phylogenomics, Evolution and Stress Associated Functions. Cold Spring Harbor Laboratory (CSHL) virtual meeting "Plant genomes, systems biology and engineering". December 01-03, 2021.
3. Raza, Q. Riaz, A., Atif, M.A., Hussain, B., Ali, Z., and Budak, H. 2021. MADS-Box Genes Galore in Wheat Genome. COMCEC-COMSTECH Training and Workshop "New Breeding Technologies for Food and Nutritional Security. 30th November - 2nd December 2021. Culture and Convention Centre, Middle East Technical University (METU), Ankara, Turkey.
4. Ali, B., M. Waqas, L. Shahid, Z. Asif, U. Aslam, M. A. R. Rashid, H. M. N. Cheema, R. M. Atif. 2019. Genome wide identification and analysis of Calcium-Dependant Protein Kinase (CDPK) family in chickpea and their expression analysis under stress conditions. 3rd National Conference on Emerging Trends in Bioinformatics and Biosciences. October 03-05, 2019. Organized by the Department of Bioinformatics, Hazara University, Mansehra, KPK, Pakistan.
5. Rehman, A., M.T. Azhar, R. M. Atif and X. Du. 2019. Identification and characterization of HSP70 gene family in cotton. 3rd Sino-Pak international conference on innovations in cotton breeding and biotechnology. 4-6 September, Changji, China.
6. Waqas, M., L. Shahid, H.G. Nabi, M.T. Azhar, I.A. Rana, F. Azeem and R.M. Atif. 2019. Genome-wide analysis of WRKY transcription factor family from chickpea and their response to abiotic stresses. 6th International Conference on Sustainable Agriculture in Changing Climate: Strategies and Management. June 19-21th at University of the Poonch Rawalakot Azad Jammu and Kashmir, Pakistan.
7. Waqas, M., L. Shahid, Z. Ali and R.M. Atif (2019). Genetic diversity among indigenous chickpea germplasm against salinity stress at seedling stage. 1st Aus-Pak International Conference on Pulses for Food Security. March 27th at Muhammad Nawaz Shareef University of Agriculture, Multan, Pakistan.
8. Rashid M.A.R., R.M. Atif and C. Hua. (2018) Phenotypic variation and heterosis study in maize under normal and low phosphorous soil. Published in Proceedings of 5th International Symposium on Genomics and Crop Genetic Improvement-Heterosis, Organized by National Key Laboratory of Crop Genetic Improvement, Huazhong Agricultural University, Held at October 22-25, 2018, Wuhan China.
9. Rashid MAR, RM Atif, M Asif and ZC Pan (2018). Modernization in potato breeding by integration of Phenomics and Genomic Research. Published in Proceedings of 5th International Symposium on Genomics and Crop Genetic Improvement-Heterosis, organized by and Held at National Key Laboratory of Crop Genetic Improvement, Huazhong Agricultural University, October 22-25, 2018, Wuhan China.

10. Farooq M.A., A. Shakeel, R.M. Atif, M.S., Saleem (2018) Genotypic Variations in Salinity Tolerance among BT- Cotton. Poster presentation at *International Cotton Genome Initiative 28May – 1st June 2018* held at University of Edinburgh, Scotland, United Kingdom.
11. Atif R.M. (2017) OMICS-aided genetic improvement of Chickpea against abiotic stresses. Invited Speaker at workshop on "Advances in Agricultural Biotechnology and Regulatory Affairs" September 25-27, 2017 held at Forman Christian College, Lahore, Pakistan.
12. Azhar M. T., R. M. Atif, Z. I. Awan, S. Mansoor (2016) Response of wild relatives of cotton against cotton leaf curl disease. In Proceedings of "World Cotton Research Conference-6 and International Cotton Genome Initiative", May 2-6, 2016, at Goiania, Brazil.
13. Chattha W.S., R.M. Atif, Z. Shahzad, F. Azeem and A. Shakeel (2015) Genotypic variation for water-deficit tolerance in *Gossypium hirsutum* L. In Proceedings of "Recent Progress in Drought Tolerance: From Genetics to Modelling" June 8, 9 & 12, 2015 at Le Corum-Montpellier, France.
14. Atif R.M., R. Thompson, S. Ochatt. (2015) Identification and analyses of DNA-binding with One zinc Finger (DOF) transcription factor family in *Medicago truncatula*. In Proceedings of "3rd National Computational Science Conference" May 13-15, 2015 at Institute of Space Technology, Islamabad, Pakistan.
15. Zahid S., A. Abbas, M.A. Ali, K. Riaz, R.M. Atif, and S.T. Sahi. (2015) Computational analysis of Defensins and Defensin-like-Proteins in Chickpea and Arabidopsis. In Proceedings of "3rd National Computational Science Conference" May 13-15, 2015 at Institute of Space Technology, Islamabad, Pakistan.
16. Tariq R., R.M. Atif. (2014) Genome-wide in-silico comparative analysis of DOF transcription factor family in chickpea (*Cicer arietinum*) with *Arabidopsis thaliana*. In Proceedings of 5th International Conference on "Agriculture, Food Security and Climate Change" September 9-11, 2014. Rawalakot, AJK, Pakistan.
17. Zahid S., A. Abbas, M.A. Ali, K. Riaz, R.M. Atif, S.T. Sahi. (2014) Evaluation of some local germplasm of chickpea against fusarium wilt and its control measure. In Proceedings of 5th International Conference on "Agriculture, Food Security and Climate Change" September 9-11, 2014. Rawalakot, AJK, Pakistan.
18. Wirsich M., Atif R. M., Schroeder M-B., Thompson R. D., Ochatt S. J. (2013) Unraveling the effect of the transcription factor DOF1147 on the in vitro effect of auxin on cell division and endoreduplication in developing seeds of the model legume *Medicago truncatula*. Poster presentation at *Meeting of the German Society of Plant Biotechnology*, August 29-30, Geisenheim, Germany.
19. Atif R. M., Sanchez M., Le-Signor C., Thompson R. D., Verdier J., Ochatt S. J. (2011) Characterization of the role of a DOF1147 transcription factor in seed filling in *Medicago truncatula*. Poster presentation at *4th National Conference of the French network of seed biology*, October 27-28, Nantes, France.
20. Atif R. M., Sanchez M., Thompson R. D., Le-Signor C., Verdier J., Ochatt S. J. (2011) Characterization of the role of selected transcription factors in seed filling in *Pisum sativum* and *Medicago truncatula*. Poster presentation at *International Congress on Model Legume Plants*, May 15-19, Sainte-Maxime, Côte d'Azur, France.
21. Svabova L., Atif R. M., Horacek J., Sehnal F., Jacas L., Hanacek P., Ochatt S., Seidenglanz M., Griga M. (2010) Genetic Transformation of Pea for Improved Tolerance / Resistance to Fungal Pathogens and Insect Pests. Poster presentation at *7th European Conference on Grain Legumes & 5th International Food Legumes Research Conference (AEP VII & IFLRC V)*, April 26-30, 2010, Antalya, Turkey.

ORGANIZATION OF WORKSHOPS / TRAININGS / CONFERENCES

1. Member of organizing team for one week "International Hands-on-training on CRISPR/Cas-mediated genome editing" conducted on May 6th – 11th, 2024, at CAS-AFS, University of Agriculture Faisalabad, Pakistan.
2. Member of organizing team for "International Wheat Conference 2022" held on October 19-20, 2022, at University of Agriculture Faisalabad, Pakistan.
3. Member of organizing team for one week "hands-on-training on CRISPR/Cas-mediated genome editing" conducted on May 23rd – 27th, 2022, at USPCAS-AFS, University of Agriculture Faisalabad, Pakistan.
4. Member of organizing team for two days "International seminar and Hands-on-training workshop on CRISPR/Cas-based genome editing" conducted on September 19-20, 2017, at USPCAS-AFS, University of Agriculture Faisalabad, Pakistan.
5. Member of organizing team for two days workshop on "Biotechnology for Crop Improvement: GM Crops Production, Challenges and Opportunities" conducted on September 5-6, 2016, at University of Agriculture Faisalabad, Pakistan.
6. Member of organizing team for two days hands-on-training workshop "Applications of Bioinformatics in Genomics" conducted on September 16-17, 2015, at University of Agriculture Faisalabad, Pakistan.
7. Member of the organizing team for two days International Colloquium on "Challenges and Opportunities of Maize production" conducted on October 3rd, 2014 at University of Agriculture Faisalabad, Pakistan.
8. Member of the organizing team for one day International workshop on "Recent Trends in Maize Production" conducted on May 3rd, 2014 at University of Agriculture Faisalabad, Pakistan.
9. Resource person & Member of organizing team for "Hands-On Training on Application of Genomics in Plant Breeding" conducting in 10 batches from February 17 to April 25, 2014, at University of Agriculture Faisalabad, Pakistan.
10. Member of the organizing team for one day workshop on "Seed Production and Supply System" conducted on December 26, 2013, at University of Agriculture Faisalabad, Pakistan.

RESEARCH GRANTS

1. Demonstration of best production management practices for chickpea production in irrigated areas of Punjab (\$15,000) Funded by Endowment Fund Secretariate, Punjab, Pakistan (2022-2025) (Ongoing as **PI**)
2. Identification of drought-responsive genes through transcriptional profiling of drought responses in chickpea (*Cicer arietinum* L.). (\$5,000) Funded by PARB, Pakistan (2018-19) N° PARB-872 (Completed as PI)
3. Identification of drought-responsive genes through transcriptional profiling of drought responses in chickpea (*Cicer arietinum* L.). (\$32,000) Funded by USPCAS-AFS, UAF, Pakistan (2016-2018) N° CAS-302 (Completed as PI)
4. Optimization of tissue culture conditions of indigenous Chickpea (*Cicer arietinum*) genotypes. (\$4500) HEC Startup Research Project (2015-2016) (completed as PI)
5. Gene Editing for Biological Agenets for Nitritional Biochemical and Therapeutic purpose (Establishment of National Center for Genome Editing for Crop Improvement and Human Health (NCGE) (2021-2025) (Ongoing as **Co-PI**)
6. Establishment of Precision Agriculture & Analytics Lab (PAAL) under the National Center in Big Data and Cloud Computing (NCBC). (\$100,000) Funded by Ministry of Science and Technology, and HEC, Pakistan (2018-2024) (Ongoing as Co-PI)

7. Molecular characterization of *Fusarium oxysporum f. sp. ciceris* and evaluation of available chickpea germplasm for resistance with emphasis on the identification of chickpea-specific AMPs. (\$26,000) Funded by HEC-NRPU, Pakistan (2015-2019) (Completed as Co-PI)
8. Evaluating the adaptation potential of Soybean germplasm under different temperature regimes. (\$5000) HEC-SRGP, Pakistan (2018-2019) (completed as Co-PI)
9. Genetic engineering for enhancing salinity tolerance in wheat (\$34,000) Funded by USPCAS-AFS, UAF, Pakistan (2016-2020) N° CAS-298 (Completed as Co-PI)
10. Metagenomics and whole genome sequencing for characterizing indigenous chickpea-root-associated rhizobia from Thal region of Pakistan for diversity analysis and bioinoculant development. (\$31,000) Funded by USPCAS-AFS, UAF, Pakistan (2016-2018) N° CAS-301 (Completed as Co-PI)
11. Biotechnology tools for improving disease resistance and seed quality in legumes. EUROSTARS (2009-2011) PeaStar E!4770. (\$275,000) (completed as Research Associate)
12. Incorporation of French-Czech expertise in biotechnologies applied to the improvement of plants. (Completed as Research Assistant) BARRANDE (2010-2011) N° MEB021021.

PARTICIPATION IN INTERNATIONAL TRAININGS / COURSES

1. One-week hands-on training on "Gene expression studies through Agilent Microarray SureScan system" from March 26-30, 2018 by Agilent Technologies at Selangor, Malaysia.
2. Three days hands-on training workshop on "RNA-Seq Workshop: Library Preparation and Introduction to Data Analysis" held from February 8th –10th, 2017 at UC Davis Genome Center, organized by Expression Analysis Core, University of California, Davis, USA.
3. One day training workshop on "So you want to do a: RNAseq experiment, Differential Gene Expression Analysis" held on January 4th at UC Davis Genome Center, organized by Bioinformatics Core, University of California, Davis, USA.
4. Successfully completed 7 week-long online Bioinformatics course, titled "Programming for Everybody" (Getting Started with Python)". offered by University of Michigan through Coursera. (Aug 2016 – October 2016)
5. Five days hands-on training on "Using Galaxy for Analysis of RNA-Seq data" held from August 29th – September 2nd, 2016 at UC Davis Genome Center, organized by Bioinformatics Core, University of California, Davis, USA.
6. One-week hands-on training on "Development of disease-resistance transgenic pea (*Pisum sativum*) through *Agrobacterium*-mediated stable genetic transformation" at Agritech Plant Research Center during July 2010, Šumperk, Czech Republic.
7. Hands-on training on "Bioinformatics for Plant Sciences" May 07th – 28th 2010, at University of Burgundy, Dijon, France.

STUDENT'S SUPERVISION

1. Supervised 5 Ph.D. students as Major Supervisor.
2. Co-Supervised 8 Ph.D. students as Member Supervisory Committee.
3. Supervised >30 students of M.Sc (Hons) as Major Supervisor.
4. Co-Supervised >30 students of M.Sc (Hons) as Member Supervisory Committee.
5. Supervised > 10 students of M.Phil.

CO-CURRICULAR & EXTRACURRICULAR ACTIVITIES

Languages

1. Urdu - Fluent
2. Punjabi - Fluent

3. English - Proficient
4. French - Intermediate

Hobbies

1. Sports (Cricket, Table Tennis)
2. Reading (Science, Space/Astronomy articles)
3. Exploring the Nature (Biking, Hiking, Photography)

Volunteering

1. Participated in Tree plantation drive with FGRF (2021, 2022)
2. Chickpea cultivation awareness campaign in irrigated cropping systems (2022)
3. Flood relief campaign during 2022 summer floods in Pakistan
4. Blood donation campaign for Thalassemia patients during Covid19 by FGRF

Memberships of Professional and Learned Societies

- i. The Genetics Society, UK. (2024-present)
- ii. Pakistan Phytopathological Society (2024-present)
- iii. Pakistan Society of Plant Breeders and Geneticists (PSPBG), Pakistan (2013-Current)
- iv. Pak-France Alumni Network (PFAN) Pakistan (2014-2024)
- v. International Cotton Genome Initiative (ICGI) (2015-2024)
- vi. Pakistan Society for Computational Biology (PSCB), Pakistan (2015-2017)
- vii. National Academy of Young Scientists (NAYS), Pakistan (2016-18)
- viii. American Association for the Advancement of Science (AAAS) (2017-18)
- ix. International Society for Horticultural Sciences (ISHS) (2017-18)
- x. International Society of Root Research (ISRR) (2018-24)
- xi. International Wheat Genome Sequencing Consortium (IWGSC) (2019-2024)

Editorial services (Verified reviews from Publons)

1. Genes and Genomics (5x)
2. Scientific Reports (3x)
3. Journal of Plant Growth Regulation (3x)
4. Pakistan Journal of Agricultural Sciences (2x)
5. BMC Plant Biology (1x)
6. BMC Genomics (1x)
7. Genomics (1x)
8. Molecular Biology Reports (1x)
9. Peer Journal (1x)
10. Frontiers in Genetics (1x)
11. Genetic Resources and Crop Evolution
12. Environmental Toxicology and Pharmacology (1x)
13. American Journal of Plant Sciences (1x)
14. Turkish Journal of Agriculture and Forestry (1x)

Verified Editor Records from Publon

1. BMC Plant Biology (5x)
2. BMC Genomic Data (1X)
3. Plos ONE (6x)
4. Peer Journal (7x)

COURSES TAUGHT

- | | |
|--|-----------------------|
| i. Introductory Bioinformatics | (Undergraduate level) |
| ii. Experimentation in Plant Breeding | (Undergraduate level) |
| iii. Breeding Pulse Crops | (Undergraduate level) |
| iv. Preparation of Research Project and Scientific Writing | (Undergraduate level) |
| v. Genomics in Agriculture | (Undergraduate level) |
| vi. Cytogenetics of Crop Plants | (Postgraduate level) |
| vii. Mutation Breeding in Crop Plants | (Postgraduate level) |
| viii. Plant Molecular Breeding | (Postgraduate level) |
| ix. Quality Evaluation and Biofortification of Crops | (Postgraduate level) |

ACADEMIC & PROFESSIONAL REFERENCES

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Dr. Richard Thompson

Professor of Plant Physiology, University of Burgundy, Dijon.

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