CURRICULUM VITAE



Prof. Dr. Fazal Akbar

Director Advanced Studies & Research Board (ASRB), University of Swat, Pakistan.

Professor (Tenured)/ Former Director, Centre for Biotechnoogy and Microbiology, University of Swat, Pakistan.

Personal Information

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Qualifications

Doctor of Philosophy (PhD): Biotechnology/Molecular Virology

1. PhD research conducted at Institute of Botany, University of Basel, Switzerland.
Research Title: Transcript analysis of *Cotton leaf curl Burewala virus* and role of C2 in pathogenesis.

National Institute for Biotechnology and Genetic Engineering (NIBGE), Faisalabad, an affiliated institute of Pakistan Institute of Engineering and Applied Sciences (PIEAS), Islamabad, Pakistan.

2. **Post doctorate:** Molecular Plant Virology lab, NIBGE, Faisalabad Pakistan (2012-2013).

AWARDS, SCHOLARSHIPS & DISTINCTIONS

- Awarded Research Productivity Award 2017 by Pakistan Council of Science and Technology (PCS
- Awarded Best University Teacher Award 2016 by Higher Education Commission (HEC) of Pakistan.
- Productive scientist of Pakistan for the year 2016 and year 2017 issued by Pakistan Council of Science and Technology (PCST).
- Awarded the 1st prize in Regional Science Olympiad/ Fair organized by Directorate of Science & Technology (DoST), Government of Khyber Pakhtunkhwa.
- Award of Excellence in Research 2020 by University of Swat.
- Awarded Best Researcher Award of the University for the year 2022-23.

- Awarded Excellence in Research Award of the University for the year 2022-23.
- Awarded the status of HEC approved PhD Supervisor in the discipline of Biological Sciences.
- Awarded the status of Interdisciplinary Research Training Center (IRTC) approved supervisor by the Directorate General of Science and Technology, Government of Khyber Pakhtunkhwa.
- Awarded 6 months' fellowship (January 2011-July 2011) for Switzerland under International research support initiative program (IRSIP) by Higher Education Commission of Pakistan.
- Awarded Indigenous PhD fellowship (2008-2012) by Higher Education Commission of Pakistan.
- Throughout First Division in the academic career.

RESUME OF WORKING EXPERIENCE

- Working as a Professor (Tenured) in Center for Biotechnology and Microbiology, University of Swat (from September 15, 2025 till date).
- Currently serving as a Director Advanced Studies & Research Board (ASRB), Universityof Swat (from June 4, 2026 till date).
- Served as a Director, Center for Biotechnology and Microbiology, University of Swat (from December 22, 2022 till December 26, 2026).
- Worked as Associate Professor (Tenured) in Center for Biotechnology and Microbiology, University of Swat (from April 12, 2021 till September 14, 2025).
- Worked as a Coordinator for M. Phil/ PhD Program, Center for Biotechnology and Microbiology University of Swat (from 2015 to 2019).
- Worked as Assistant Professor in Center for Biotechnology and Microbiology, University of Swat (from July 8, 2013 till April 11, 2021).
- Engaged as a Visiting Professor in Institute of Cotton Research of Chinese Academy of Agriculture Sciences (CAAS), China from July 17, 2019 till October 22, 2019.
- Worked as a Researcher (Post-doc) in a project entitled "Pak-US Cotton Productivity Enhancement Project" Analysis of the diversity of cotton leaf curl begomovirus complex and its whitefly vector in Pakistan- Component, funded by the United States Department of Agriculture (USDA), managed by the International Center for Agricultural Research in the Dry Areas (ICARDA, Islamabad office) (from May,

2012 to April, 2013) at National Institute for Biotechnology and Genetic Engineering, Faisalabad/Principal investigator (PI) of the project, Prof. Dr. Rob W. Briddon.

- Six months training experience in Institute of Botany, University of Basel, Switzerland (from January, 2011 to July, 2011).
- Worked as a PhD Scholar in HEC funded project (from 2008 to 2012) at National Institute for Biotechnology and Genetic Engineering, Faisalabad/Principal investigator (PI) of the project, Dr. Muhammad Saeed (Principal Scientist).

Projects awarded:

PI:

- Analysis of the diversity of begomovirus-complex and its whitefly vector in Khyber Pakhtunkhwa (funded by Higher Education Commission Pakistan, worth 4.7 million).
- Analysis of a unidirectional plant promoter from cotton associated begomoviruses (funded by Higher Education Commission Pakistan, worth 2.3 million).
- Investigation of resistance breakdown of cotton leaf curl disease (funded by Pakistan Science Foundation, worth 3.0 million).
- Exploration of geminiviruses and satellites in Swat valley (funded by Higher Education Commission Pakistan, worth 0.5 million).
- Evaluation of antibodies response in COVID-19 recovered patients for its use in plasma therapy (Small research grant funded by University of Swat).

Co-PI:

- Designing biological control strategies against peach leaf curl disease (funded by Higher Education Commission Pakistan, worth 2.9 million).
- Molecular characterization and prevalence of hepatitis C virus infection in mentally disabled persons in District Swat (funded by Higher Education Commission Pakistan, worth 0.5 million).
- Demographic and phylogenetic analysis of *Helicoverpa armigera* pyrethroids resistant strain in Pakistan (funded by Higher Education Commission Pakistan, worth 0.5 million).
- Degraded DNA studies through non codis STRs (funded by Higher Education Commission Pakistan, worth 0.5 million).

Collaborating Research Projects:

- A collaborator with Professor Liu Chuan Liang, State Key Laboratory of Cotton Biology, Institute of Cotton Research of CAAS, China in a research project entitled ‘‘Investigating the virus carrying whitefly vector in the Yellow River Basin, China’’ submitted to Asian Regional International Cooperation Special Project program.
- A collaborator with Dr. Ishtiaq Hassan, Department of Biotechnology and Genetic Engineering, Hazara University Mansehra, in a research project entitled ‘‘Population dynamics of begomovirus complex and its insect vector in vegetable crops of Khyber Pakhtunkhwa’’ funded by HEC under NRPU program.

Committee membership:

- Member of Academic Council, University of Swat, Pakistan.
- Member of Advanced Studies and Research Board (ASRB), University of Swat, Pakistan.
- Convener of Graduate Studies Committee, Center for Biotechnology and Microbiology, University of Swat, Pakistan.
- Member of the HEC National Curriculum Review Committee (NCRC) of Biotechnology.
- Member Board of Studies, Department of Plant Breeding and Genetics, The University of Agriculture, Swat, Pakistan.
- Member Board of Studies, Department of Entomology, The University of Agriculture, Swat, Pakistan.
- Member Board of Faculties for Life Sciences, University of Swat, Pakistan.
- Member Board of Faculties for Allied Health Sciences, University of Swat, Pakistan.
- Member Board of Studies, Department of Biotechnology, Women University, Mardan, Pakistan.
- Member Board of Studies, Center for Animal Sciences and Fisheries, University of Swat, Pakistan.
- Member Board of Studies, Department of Forensic Sciences, University of Swat, Pakistan.
- Convener Board of Studies, Center for Biotechnology and Microbiology, University of Swat, Pakistan.
- Convener of Departmental Semester Committee, Center for Biotechnology and

Microbiology, University of Swat, Pakistan.

- Member of Departmental Semester Committee, Department of Forensic Sciences, University of Swat, Pakistan.
- Member Board of Studies for Dental Technology, Centre for Medical Technologies, Faculty of Allied Health Sciences, University of Swat, Pakistan.
- Member Board of Studies for Doctor of Physical Therapy, Centre for Pharmaceutical and Rehabilitation Sciences, Faculty of Allied Health Sciences, University of Swat, Pakistan.
- Member Board of Studies for Radiography and Imaging Technology, Centre for Medical Technologies, Faculty of Allied Health Sciences, University of Swat, Pakistan.
- Member Board of Studies for Medical Lab Technician, Centre for Medical Technologies, Faculty of Allied Health Sciences, University of Swat, Pakistan.
- Focal person of the program team (PT), Center for Biotechnology and Microbiology, University of Swat, Pakistan.
- Focal person for Prime Minister National Laptop Scheme, Higher Education Commission, Islamabad Pakistan.
- Seminar Organizer, Center for Biotechnology and Microbiology, University of Swat, Pakistan.
- Member of the Assessment team (AT) for Department of Animal Sciences and Fisheries, University of Swat, Pakistan.
- Focal person of Admission Committee, Center for Biotechnology and Microbiology, University of Swat, Pakistan.
- Focal person of the Departmental Semester coordinators for the selection of visiting faculty, Center for Biotechnology and Microbiology, University of Swat, Pakistan.
- Member of the Committee on Research, University of Swat, Pakistan.
- Member of committee for Research projects implementation & SOPs, University of Swat, Pakistan.
- Member of Strategic Plan Committee, University of Swat, Pakistan.
- Member of Departmental Tenure Review Committee (DTRC) for the Department of Forensic Sciences, University of Swat.
- Convener of the DTRC for Center for Biotechnology and Microbiology, University of Swat, Pakistan.

- Member of DTRC for the Institute of Chemical Sciences, University of Swat.
- Member of DTRC for the Institute of Agriculture Sciences and Forestry, University of Swat.
- Member of Ethical Institutional Review Board, University of Swat.
- Member of Faculty Grievance Redressal Committee, University of Swat.
- Member Board of Studies, Department of Biotechnology, University of Malakand, Pakistan.
- Member Institutional Biosafety Committee (IBC), University of Swat.
- Member/ Expert of Biotechnology, Planning Commission of Pakistan.
- Member of the ORIC scorecard committee, ORIC, University of Swat.

TEACHING ACTIVITIES

- Offering various courses of Biotechnology & Microbiology to M. Phil and Ph. D. Scholars since last fourteen years.
- Teaching various courses of Biotechnology, Genetics, and Microbiology to Bachelor and Master level students at Centre for Biotechnology and Microbiology, University of Swat since last fourteen years.

CONFERENCES, WORKSHOPS and SEMINARS Participated

- Presented a research paper in 1st National Symposium on "Recent advances in Biotechnology" University of Malakand, May 21-24, 2007.
- Participated in a conference on "micro RNA by Professor Dr. David Baulcombe from USA" in University of Basel, Switzerland, June 2011.
- Presented a PhD research seminar at NIBGE, Faisalabad, May 2012.
- Presented a research paper in "International conference on Biotechnology: Prospects and Challenges in Agriculture, Industry, Health & Environment" at NIBGE, Faisalabad, April 22-26, 2013.
- Participated in a workshop on "Scientific Writing" 20 and 21 October 2015, organized by Hassan Ibrahim Jamal (HEJ) Institute Karachi.
- Participated in talk session by Professor Dr. Atta-Ur-Rehman on "Building a knowledge economy: Imperative for socio-economic development" organized by HEC, Pakistan dated September 2, 2015.

- Delivered a talk on the scope of Biotechnology at Govt. Degree College Daggar, Buner dated November 17, 2015.
- Participated in a workshop on writing effective post-doctoral research proposal relevant to national needs on December 17, 2015 at University of Malakand, Chakdara.
- Participated in a seminar on Cancer prevention and treatment dated February 4, 2016 at SINOR, Saidu Sharif Swat.
- Presented a poster on "Phylogenetic and biogeographic analyses of *Cotton leaf curl Kokhran virus*-Burewala" in the International conference on advancement in Biotechnology organized by Government college women university Faisalabad and Akhuwat-FIRST on March 30 to 31, 2016.
- Participated in a conference on "7th one-day conference on the significance of Bioinformatics in Biosciences" at the Department of Bioinformatics and Biosciences, Capital University of Science and Technology, Islamabad.
- Presented a research paper on "First symptomatic evidences of geminiviruse in Swat valley" in 13th National conference on weed sciences, dated August 19-21, 2016, at Shaheed Benazir Bhatto University, Sheringal Dir Upper, KP, Pakistan.
- Participated in National Symposium on economic development though medicinal plants and conservation cultivation, dated May 5-6, 2016, organized by Center for Plant Sciences and Biodiversity, University of Swat, Pakistan.
- Participated in 5 days training workshop on Biorisk management, dated September 5-9, 2016, organized by Relief International (RI) at Center for Biotechnology and Microbiology, University of Swat.
- Participated in one-day workshop on Leadership, Motivation and Rule of law, dated October 21, 2016, organized by Center for Animal Sciences and Fisheries and Department of Forensic Sciences, University of Swat.
- Participated in one-day workshop on "Quality Assurance through promoting Anti-plagiarism culture" dated January 5, 2017 organized by Quality Enhancement Cell, University of Swat.
- Participated in one-day seminar on "Self-assessment report writing" dated March 9, 2017 organized by Quality Enhancement Cell, University of Swat.

- Presented a research paper on “Bibliometric analysis of worldwide publications on Cotton leaf curl disease research" in Conference on Computational Biology and Genomics, dated September 27-29, 2017 at Hazara University Masehra, KP, Pakistan.
- Presented a research paper on “Transcript mapping of cotton associated begomoviruses" in Conference on Computational Biology and Genomics, dated September 27-29, 2017 at Hazara University Masehra, KP, Pakistan.
- Performed as Ambassador/ participant in Innovative Youth Awards 2017 held on December 30, 2017 at Wadoodia Hall, Swat.
- Participated in one-day workshop on “Anti-plagiarism and use of Turnitin" dated April 11, 2018 organized by the Quality Enhancement Cell, University of Swat.
- Participated in one-day seminar on “Writing a winning grant proposal and scholarship application" dated July 3, 2018 organized by the Department of Forensic Sciences, University of Swat.
- Participated in three days training workshop on “Research Methodology" dated August 8-10, 2018 at PTCL Campus, University of Swat, jointly organized by Learning Innovation Division (LID), HEC, and Quality Enhancement Cell (QEC). University of Swat.
- Presented a research paper on “Investigation of plants single stranded DNA viruses infecting medicinal and aromatic plants in Swat valley" in 2nd International conference on Conservation of Medicinal and Aromatic Plants (MAPs) for Improving the Livelihood of Mountain Communities through Industrial Linkages, dated September 3-5, 2018, organized by Center for Plant Sciences, University of Swat, KP, Pakistan.
- Presented a research paper on “Biosynthesis of Iron oxide nanoparticles via *Skimmia laureola* and their antimicrobial efficiency against bacterial rot pathogen *Erwinina carotavora*" in 2nd International conference on Conservation of Medicinal and Aromatic Plants (MAPs) for Improving the Livelihood of Mountain Communities through Industrial Linkages, dated September 3-5, 2018, organized by Center for Plant Sciences, University of Swat, KP, Pakistan.
- Participated in one day hands on training workshop “Principles of Biosafety and Biosecurity" at Department of Zoology, University of Buner, dated October 23, 2018, organized by Department of Zoology, University of Buner in collaboration with

Pakistan Biological Safety Association (PBSA) & Fogarty International Center, NIH USA.

- Participated in 1st National Workshop on Molecular Biology: Tools & Techniques, dated November 12-14, 2018, organized by Department of Botany, University of Malakand, KP, Pakistan.
- Presented a research paper on "The threat of begomovirus and satellites is spreading into Khyber Pakhtunkhwa" in 1st National conference on Microbiology of Infectious diseases and health safety " dated April 4-5, 2019, organized by Department of Microbiology, University of Sawabi, KP, Pakistan.
- Presented a research paper and awarded a best oral presenter award on "Isolation, identification and molecular characterization of causative agent of peach leaf curl disease in Swat" in 1st National conference on Microbiology of Infectious diseases and health safety" dated April 4-5, 2019, organized by Department of Microbiology, University of Sawabi, KP, Pakistan.
- Participated in International Workshop on "Use of Genome Editing & other New Breeding Technologies for Global Food Security" jointly organized by ICGEB, COMSTECH and NIBGE on April 8-1 0, 201 9, COMSTECH Islamabad, Pakistan.
- Presented a research paper on ''Molecular characterization of begomovirus and associated satellites infecting important crops in Khyber Pakhtunkhwa, Pakistan'' in ''3rd International Conference; Empowering nation through sciences'' held on 24th - 25th April, 2019, Islamabad, Pakistan.
- Participated in one-day seminar on ''O-GlcNAcylation in cervical cancer metastasis in cell death'' held on April 26, 2019, organized by Institute of Chemical Sciences, University of Swat.
- Presented a paper on ''Exploration of begomoviruses and their associated satellites infecting different crops in Buner region'' in 1st International Conference on Recent Updates in Biotechnology 2019, held on October 16, 2019, organized by Department of Biotechnology, AWKUM, Mardan.
- Presented a research paper on ''Isolation and molecular characterization of *Naganishia species associated with peach leaf curl disease in District Swat*, Pakistan'' region'' in 1st International Conference on Recent Updates in Biotechnology 2019, held on October 16, 2019, organized by Department of Biotechnology, AWKUM, Mardan.

- Presented a research paper on ‘‘Evaluation of antifungal activities of *Tribulus terrestris and Glycyrrhiza glabra* plant extracts against *Taphrina* species of peach leaf curl disease’’ region’’ in 1st International Conference on Recent Updates in Biotechnology 2019, held on October 16, 2019, organized by Department of Biotechnology, AWKUM, Mardan.
- Presented a research paper on ‘‘Diversity of fishes in the tributaries of River Swat’’ in 1st International Conference on Recent Updates in Biotechnology 2019, held on October 16, 2019, organized by Department of Biotechnology, AWKUM, Mardan.
- Participated in three days conference ‘‘The 40th anniversary of the cotton branch of the Chinese agricultural society and 2019 annual meeting’’ held on August 7-9, 2019 organized by China National University of Development and China Cotton Society of Chinese Academy of Agriculture Sciences at Friendship hotel, Beijing China.
- Invited as a speaker on the topic ‘‘Plant viruses with special emphasis on the Status of Cotton leaf curl disease in Pakistan’’ dated September 19, 2019 at Institute of Cotton Research of CAAS, Anyang, China.
- Presented a research paper on the topic ‘‘First report of the phytopathogens associated with peach leaf curl disease in Pakistan’’ in National Conference on Beneficial Microbes & Sustainable Crop Production, dated 19th to 20th February, 2020, organized by Department of Agronomy, The University of Agriculture Peshawar and American Society for Microbiology.
- Invited as a speaker on the topic ‘‘Status of peach leaf curl disease in Pakistan’’ dated September 10, 2019 at Zhengzhou Fruit Research Institute (ZFRI), CAAS, P.R. China.
- Participated in the KP CREATIVE FEST 2020, organized by Directorate of Science & Technology (DoST), held at Islamia College Peshawar on 26-27 February, 2020.
- Participated in three day Awareness and training workshop on Crimean-Congo Hemorrhagic

  Fever (CCHF) virus, organized by the Health Security Partners, USA, and Department of Biotechnology, University of Malakand, held on December 22-24, 2020.
- Participated in five-day virtual training on Biorisk Arrangement organized by Association for Biorisk Management (ABM) Training, in collaboration with Health

Security Partners (HSP) at Biotechnology laboratory, University of Swat, dated May 31 to June 4, 2021.

- Participated in two-days Biorisk Management refresher training course, organized by ABM, in collaboration with HSP and University of Swat at Microbiology lab, University of Swat, dated December 30 to 31, 2021.
- Presented a research paper on the topic ‘‘Plant Viruses: A serious threat to food security in Khyber Pakhtunkhwa’’ in International Conference on Food Security Though Sustainable Plant Protection Strategies, dated 16th to 20th January, 2022, organized by Department of Plant Protection, The University of Agriculture Peshawar.
- Presented a research paper on the topic ‘‘Genetic diversity of begomovirus-complex and its whitefly vector in Khyber Pakhtunkhwa’’ in First International Conference on Biotechnology, BIOCON-‘2022, dated March 16-17, 2022 organized by Department of Biotechnology, University of Karachi, Pakistan.
- Presented a research paper on the topic ‘‘Analysis of the genetic diversity of begomovirus-complex and its whitefly (*Bemicia tabaci*) vector in Swat’’ in Fifth International Conference on Advances in Biosciences, Bridging the gap between research and sustainable development goals, dated May 24-26, 2022, organized by Center for Plant Sciences & Biodiversity, University of Swat.
- Presented a research paper on the topic ‘‘Comparative performance of exotic cotton varieties under the climatic conditions of Swat’’ in Fifth International Conference on Advances in Biosciences, Bridging the gap between research and sustainable development goals, dated May 24-26, 2022, organized by Center for Plant Sciences & Biodiversity, University of Swat.
- Participated in three days Kazakhstan-Pakistan-Turkiye; Youth Forum on Biotechnology, dated 13th September to 15th September, 2022, jointly organized by COMSTECH, IOFS, and ICYF, at COMSTECH, Islamabad.
- Presented a research paper on the topic ‘‘Immunoinformatics-based design of immune-boosting multiepitope subunit vaccines against monkeypox virus and validation through molecular dynamics and immune simulation’’ in three days’ International Conference on the topic ‘‘Endemic and Pandemic preparedness’’ dated December 5-7, 2022, at Pakistan Academy of Sciences (PAS), Islamabad, and Alliance of International Science Organization (ANSO).

- Participated in three days' International Conference on the topic ''Endemic and Pandemic preparedness'' dated December 5-7, 2022, at Pakistan Academy of Sciences (PAS), Islamabad, and Alliance of International Science Organization (ANSO).
- Presented a research paper on the topic ''Current status of peach leaf curl disease and analysis of the genetic diversity of begomovirus-complex and its whitefly in Swat, Khyber Pakhtunkhwa, Pakistan'' in first China-Central Asia International conference on the Innovation and Cooperation of Agricultural Science and Technology, held in Changji, Xinjian, China from July 15, 19, 2023.
- Presented a research paper on the topic ''Arrival of plant-infecting geminiviruses into Khyber Pakhtunkhwa, Pakistan from across the borders'' dated October 16-18, 2023, organized by ANSO-PAS-MAAO conference 2023 on the theme Pathogen transmission beyond borders: Understanding the complexities cross species infectious diseases at Pakistan Academy of Sciences (PAS), Islamabad, and Alliance of National & International Science Organization (ANSO).
- Presented a research paper on the topic ''Incidence, disease severity and genetic diversity of plant-infecting geminiviruses in Khyber Pakhtunkhwa'' on the theme 1st International conference on ''Innovations in Biotechnology and Genetic Engineering'' dated November 1-3, 2023, organized by Department of Biotechnology and Genetic Engineering, Hazara University, Mansehra.
- Participated in a two-day workshop on ''Teaching and talking of peace in the vulnerable region of Pakistan'' held on October 26-27, 2023 USEFP in collaboration with University of Swat.
- Participated in one-day training workshop on "Protection and Commercialization of Intellectual Property Rights (IPRS)" in Abdul Wali Khan University Mardan (AWKUM), on December 13, 2023 organized by NIGAB, NARC, Islamabad, and AWKUM.
- Participated in one-day seminar on "Adoption of innovative techniques for agro-food production and value addition" on December 28, 2023, organized by Pakistan Council of Scientific & Industrial Research (PCSIR) Laboratories complex, Peshawar.
- Participated in one-day seminar on "World Blood Donor Day 2024'' on June 10, 2024, organized by Regional Blood Centre, Swat, in collaboration with the International Society of Blood Transfusion.

- Participated in three-day complementary training on biorisk management entitled" Enhancing biological laboratories capabilities in Pakistan" dated August 28-30, 2024, conducted by Association for Biorisk Management (ABM), Pakistan in collaboration with Health Security Partners.
- Presented a research paper on the topic ‘‘Phylogenetic and genetic biogeographic analysis of Tomato leaf curl New Delhi virus isolated from round gourd plant in Swat, Khyber Pakhtunkhwa, Pakistan’’ on the theme International conference on ‘’Emerging Trends in forensic science’’ dated July 2-4, 2024, organized by Centre for Biotechnology and Microbiology, University of Swat, Pakistan.
- Participated in one-day seminar on "Diabetes and Wellbeing" on November 12, 2024 at Centre for Biotechnology and Microbiology (CBM), University of Swat, organized by Society for disaster management & health affairs in collaboration with PHARMEVO & CBM.
- Actively participated in social work towards noble cause ‘’ Thalassemia free Pakistan ‘’ by Jamila Sultana Foundation, 2024.
- Presented a research paper on the topic ‘‘Geminiviruses infect diverse plant species in Khyber Pakhtunkhwa: A threat to food security’’ dated December 21-22, 2024, organized by ANSO-PAS- conference 2024 on the theme ‘’ Understanding and mitigating the threat of emerging pathogens: opportunities and challenges’’ at Pakistan Academy of Sciences (PAS), Islamabad, and Alliance of National & International Science Organization (ANSO).
- Participated as an Invited Speaker/ Session Chair in the National Conference on "Recent Advances in Biological Sciences (RABS 2025)" dated January 21-22, 2025, on the topic "Molecular characterization of begomoviruses and satellites infecting diverse plant species in Khyber Pakhtunkhwa" organized by Department of Biology, Lahore Garrison University, Lahore.
- Presented a research paper on the topic "Incidence, disease severity and genetic diversity of plant-infecting DNA viruses in Swat" dated January 4-6, 2025, in the International conference on Sustainable Forest Management: Strategies for balancing forest conservation with human needs and climate change impacts on February 4-6, 2025, organized by Institute of Forest Sciences, University of Swat.
- Presented a research paper on the topic "Emergence and molecular epidemiology of geminiviruses infecting diverse plant species in Swat" dated August 5-7, 2025, in the

1st International conference on climate resilient mountain agriculture (crma-25): "Innovating together for sustainable livelihood" organized by Centre for Climate Resilient Mountain Agriculture, The University of Agriculture Swat.

- Presented a research paper on the topic "Genetic diversity of geminiviruses infecting diverse plant species in Khyber Pakhtunkhwa" dated October 16-17, 2025, in the 1st International conference on Recent Advances in Green Biotechnology and Climate Resilience at Shaheed Benazir Bhutto University, Sheringal, Pakistan.
- Participated as a Session Chair in the International Conference on "The Future Reimagined: Innovation through Science, Social Science and Global Collaboration" February 10-12, 2026, organized by Women University Mardan, Pakistan.
- Participated as a Presenter in the "International Conference on Climate Change, Human Health and WASH: Strengthening Resilience in Pakistan" held one July 31st to August 2nd, 2026 at the University of Peshawar, Baragali Campus.

Workshops/ Conferences/ Seminars organized:

- Organized 2nd International Conference on the theme "Sustainable Forest Management: Strategies for balancing forest conservation with human needs and climate impacts" dated May 13-15, 2026, organized by the Department of Agricultural Sciences and Forest, University of Swat.
- Organized (as a Patron) BioCon2025 on the theme "International Conference on Bioscience Innovation" dated September 20-22, 2025, organized by the Centre for Biotechnology and Microbiology, University of Swat.
- Organized Scientific Exhibition on the Theme: Building Innovative Pakistan, 1st Annual Research and Creativity Showcase, dated August 14, 2025, organized by the Centre for Biotechnology and Microbiology, University of Swat.
- Organized an International Symposium (Hybrid) on: From proposal to Discovery-Emerging Research in Zoology, dated June 19-19, 2025, organized by the Centre for Animal Sciences and Fisheries, University of Swat.
- Organized an International conference on Sustainable Forest Management: Strategies for balancing forest conservation with human needs and climate change impacts on February 4-6, 2025, organized by Institute of Forest Sciences, University of Swat.
- Organized 1st ICESCO-INTERGEN webinar on rare diseases in healthcare on October 23, 2024.

- Organized (as a Patron) three days' International conference and workshop on Emerging Trends in Forensic Sciences, dated July 2-4, 2024, organized by Centre for Biotechnology and Microbiology, University of Swat.
- Organized one-day hands on training workshop on "Biorisk Management for Life Sciences students'' dated June 6, 2024, organized by Centre for Biotechnology and Microbiology, University of Swat in collaboration Health Security Partners (HSP), USA.
- Organized one-day workshop on "Protection of Intellectual Property Rights for Agricultural and Other Technologies" dated May 30, 2024, organized by National Institute for Genomics and Advanced Biotechnology (NIGAB), PARC-NARC, Islamabad and Center for Biotechnology and Microbiology, and ORIC, University of Swat.
- Organized (as a Patron) three days National Bio Conference (BIOCON-2023) on Recent Trends in Biosciences, dated June 21-23, 2023, organized by Center for Biotechnology and Microbiology, University of Swat.
- Organized (as a Patron) a webinar on ''One Health'', Challenges and Prospective, dated July 5, 2023, organized by Center for Biotechnology and Microbiology, University of Swat.
- Organized one-day symposium on International DNA day on Human Genome Project 20th anniversary, dated May 23, 2023, organized by Center for Biotechnology and Microbiology, University of Swat.
- Organized one-day training and awareness seminar on animal infections in Pakistan, dated January 26, 2023, in collaboration with NUST, Islamabad, and University of Malakand at Conference Hall, Center for Biotechnology and Microbiology, University of Swat.
- Organized five days International Conference on Food Security Though Sustainable Plant Protection Strategies, dated 16th to 20th January, 2022, organized by Department of Plant Protection, The University of Agriculture Peshawar.
- Organized two days Collaborative Workshop and Debates on Rule of law, diversity, tolerance, and leadership on August 11-12, 2021 in collaboration with Centre for Research and Security Studies (CRSS), Islamabad, and Department of Forensic Sciences, University of Swat, Pakistan.

- Organized 4-day virtual training program on '' Strategies to develop chemical and biological safety culture in medical laboratories'' on February 5-8th 2021, organized by Centre for Biotechnology and Microbiology, University of Swat in collaboration with Health Security Partners USA.
- Organized one-day student's seminar and poster exhibition on February 18, 2021 at PTC Hall, University of Swat in collaboration with Department of Forensic Sciences, University of Swat.
- Organized one-day seminar entitled '' Coronavirus infection: Awareness Seminar on Prevention and Control'' held on March 3, 2020 at Swat Regency Hotel.
- Organized one-day seminar entitled '' Genome Re-sequencing: Technology & Applications'' on October 16, 2018 at the PTCL hall, University of Swat.
- Organized one-day seminar entitled '' Studies on advanced materials'' held on December 28, 2018 at the PTCL hall, University of Swat.
- Organized an awareness seminar entitled '' Prevention and control of mosquito-borne diseases'' on April 25, 2018 at the PTCL hall, University of Swat.
- Organized one-day workshop entitled '' Biosafety and Biosecurity for Scientists'' on November 14, 2017 at the PTCL hall, University of Swat.
- Organized one-day seminar entitled '' Biotechnology Driven Socio-economic Development'' on September 3, 2015 at the Video Conference Room, Main Campus Odigram.

Membership of Scientific Societies

- Life member Biotechnology Society of Pakistan
- Ambassador of Innovative Youth Forum
- Member of International Society for Development and Sustainability, Japan.
- Member of Asian Council of Science Editors, Dabai, UAE.

Editor/ Reviewer (Journals)

- Bioengineering and Biosciences, Horizon Research Publishing, USA.
- Journal of Advances in Microbiology and Biotechnology (JAMB), UAE.
- Trends in Clinical Microbiology, Gratis Open Access Publishers, USA.
- Cellular and Molecular Biology, CMB-ASSOCIATION 34, Boulevard Solferino 86000 POLITIERS France.

- Pakistan Journal of Zoology, Pakistan.
- The International Journal of Global Sciences, Pakistan.
- American Journal of Biochemistry and Molecular Biology.
- Biotechnology.
- International Journal of Virology.
- Singapore Journal of Scientific Research.
- Asian Journal of Biotechnology.
- International Journal of Tropical Insect Science.
- Journal of King Saud University - Science*
- Australasian Plant Pathology
- Sains Malaysiana
- Asian Plant Research Journal
- 3 Biotech
- International Journal of Agriculture and Biology (IJAB)
- National Journal of Biological Sciences (NJBS)
- BMC Plant Biology
- Acta Biologica, Poland
- Journal of Bimolecular Structure & Dynamics
- Physiologia Plantarum, UK
- International Journal of Agriculture and Biosciences
- Agrobiological Records
- GM Crops and Food, USA
- Microbial Pathogenesis, Elsevier.
- Gene, Elsevier.
- Computers in Biology and Medicine
- Journal of Cotton Research
- Viruses, MDPI
- BMC Plant Biology
- VirusDisease, India.
- Journal of Phytopathology, Wiley, USA.
- Current Research in Biotechnology
- Discover Plants, Springer Nature.
- Pakistan Journal of Botany
- Discover Viruses, Springer Nature

Publications

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13) **Akbar, F.,** Rahman. A., Rehman, A., et al. (2021). The role of phytohormones in combating biotic stress. In: Fahad et al., Plant growth Regulators for climate-smart agriculture. Taylor & Francis. 12, 187-206. https://doi.org/10.1201/9781003109013

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15) Rasool A., **Akbar F.,** Rehman A., Jabeen H. (2020). Genetic Engineering of Rice for Resistance to Insect Pests. In: Roychoudhury A. (eds) Rice Research for Quality Improvement: Genomics and Genetic Engineering. Springer, Singapore., Volume 2, 129-148. https://doi.org/10.1007/978-981-15-5337-0.
16) Rehman A., Almas HI., Mazhar K., **Akbar F.,** Ali Q., Azhar MT., Du X. (2020). Breeding approaches to generate biofortified rice for nutritional enhancement. In: Roychoudhury A. (eds) Rice Research for Quality Improvement: Genomics and Genetic Engineering. Springer, Singapore Volume 2, 509-540. https://doi.org/10.1007/978-981-15-5337-0_22.
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Research Supervision:

PhD Supervised:

1. Mr. Fazal Hussain (2024) for his thesis "The impact of essential elements nano-particles on lead (Pb) phytoextraction and growth of selected plants''.
2. Miss Chand Bibi for her Thesis (2025) "Analysis of genetic diversity of begomoviruses complex in District Swat, Pakistan.
3. Mr. Asadullah for his Thesis (2026) "Molecular characterization of begomoviruses infecting selected medicinal plants in Swat, Khyber Pakhtunkhwa, Pakistan''.
4. Saba Ayaz for her Thesis (2026) "Analysis of population dynamics and molecular biodiversity of *Bemicia tabaci* complex in Swat''.

PhD (under supervision):

1. Mr. Syed Rizwan Ali Shah for his thesis "Population dynamics of whitefly *Bemicia tabacci* and evaluation of begomovirus resistance in tomato''.
2. Hurmat Bibi for her Thesis "Analysis of the genetic diversity of mastreviruses infecting selected legume plants in Swat, Khyber Pakhtunkhwa, Pakistan''.
3. Kiran Ahmad for her thesis "Isolation, identification and molecular characterization of the causative agent of peach leaf curl disease in Swat, Khyber Pakhtunkhwa, Pakistan''.
4. Mr. Zakria Bacha for his Thesis "Development and optimization of innovative hydroponic growing system for higher production of *Stevia rebaudiana*".
5. Mr. Sohail Khan for his Thesis "Whole genome sequencing and antimicrobial resistance profiling of emerging *Cornybacterium pseudotuberculosis* isolated from goats in Pakistan".
6. Mr. Suleman Shah for his Thesis "Mutational analysis of β-lactamse resistance genes in *Pseudomonas aeruginosa* isolated from diabetic foot ulcer in Swat and investigating the therapeutic potential of *Punica granatum peel* extracts".

M. Phil Supervised

1. Miss Kalsoom Bibi (2018): Thesis title "Phylogenetic and biogeographic analysis of begomovirus complex in Pakistan".

2. Mr. Rashid Sultan (2018): Epidemiology of scabies in Buner region.

3. Mr. Akhtar Hamid (2019): Exploration of begomoviruses and associated satellites infecting different crops in Buner region.

4. Mr. Ishaq Khan (2020): Molecular characterization of begomovirus and associated satellites infecting vegetable crops in Swat valley.

5. Mr. Darya Khan (2020): Evaluation of resistance in local peach cultivars and antifungal activity of different plant extracts against *Taphrina* species of peach leaf curl disease.

6. Mr. Ali Shah (2020): Molecular characterization of begomovirus associated satellites infecting *Spanacia oleracea* and *Capsicum annum* plants in Kohat.

7. Sumaira Noor (2020): Determination of multidrug resistant bacteria, isolated from patients with respiratory tract infection, admitted in tertiary care hospitals at Peshawar.

8. Kiran Ahmad (2021): Genetic diversity analysis of *Bemisia tabaci* in Swat

9. Hayam (2021): Phylogenetic and biogeographic analyses of *Bemicia tabacci*

10. Shah Hassan (2021): Prevalence of multi-drug resistant tuberculosis patients in District Swat

11.Gulrukh Ahmad (2021): Biogenic synthesis of silver nanoparticles using callus and *in vitro* shoots of *Ajuga bractosa* for antimicrobial activities.

12. Samiullah Khan (2022): Exploration and molecular characterization of mastreviruses infecting crops in swat.

13. Saifullah Khan (2022): Isolation and characterization of Rhizospheric and endophytic bacteria of *Barberis lycium* and their screening against plant fungal pathogens.

14. Syed Saad Jan (2022): Comparative performance of Chinese and Pakistani cotton varieties under the climatic conditions of Swat.

15. Fawad Rahman (2023): Evaluation of antifungal activity of nanoparticles and plant extracts against the peach leaf curl disease causing fungi.

16. Saran Zeb (2023): Detection and rifampicin resistance profile of *Mycobacterium tuberculosis* complex in acute cough patients of tertiary care hospital of District Swat, Khyber Pakhtunkhwa.

17. Kainat Ahmad (2023): Synthesis of silver nanomaterials using green algae *Oedogonium* species and investigation of its bacterial, antioxidant and anti-leishmanial activity.

18. Shama (2023): Identification and population dynamics of insect pests of important field crops in Swat valley

19. Rabia Mir (2023): Assessent, identification and population density of insect pests in economically important crops of District Buner

20. Bakht Muhammad (2024): Quantification of SARS-CoV-2 viral load in post-vaccinated COVID-19 infected patients of Khyber Pakhtunkhwa

21. Mujeebur Rahman (2024): Screening of school children for the detection of SARS-COV-2 antibodies and antigens in District Torghar.

22. Mr. Suleman Shah (2024): Differential antibacterial potential of selected traditionally used medicinal plants against the phytopathogens *Erwinia caratovora* and *Ralstonia solanacearum.*

23. Mr. Abdullah (2024): Frequency of drug-resistant pulmonary tuberculosis at District Swat.

24. Mr. Muhammad Riaz (2025): Investigating the spread of multi-drug-resistant tuberculosis in District Buner.

25. Mr. Israr Khan (2025): Enhancing metabolites profile in calli cultures of *Artemisia persica* using biogenesis silver nano particles.

26. Mr. Ghani Rahman (2025): Mutational analysis of Monkeypox virus H1L protein and its effect on evasion of human immune system using molecular docking and simulation approaches.

27. Mr. Amjad Ali (2025): Evaluating the differential and synergistic efficacy of extracts of ginger and asafetida as potential antibacterial agents.

28. Mr. Abdul Qahar (2025): Mutational analysis of β-lactamases resistant genes of *Pseudomonas aeruginosa* obtained from clinical isolates of tertiary care hospital, Peshawar.

29. Mr. Sohail Aftab (2025): Exploring phytocompounds to target the interface residues in the P300 and HIF1Alpha Interaction: A molecular screening and simulation approach.

30. Ms. Uzma Iqbal (2026): The combined antimicrobial efficacy of selected medicinal plants extracts against resistant bacteria from the wounds of diabetic patients.

31. Mr. Abdur Rahim (2026): Identification and analysis of a strong bidirectional and unidirectional promoters of begomoviruses.

32. Mr. Shakeel Ahmad (2026): Impact of seed priming of Brassica napus L. seeds using palm seed extract on biomass and antioxidant metabolites profile.

33. Bushra Bibi (2026): Identification and antibiogram analysis of resistant *E. coli* in UTI patients of Swat for designing effective antibiotic therapy.

34. Naila (2026): *Chenopodium album* essential oil and commercial antibiotics conjugate as alternative therapeutics approach against *Enterobacter.*

35. Muhammad Abbas (2026): Seroprevalence and viral load of Hepatatis C virus in COVID-19 vaccinated individuals in Swat.

36. Ihsan Ullah (2026): Seroprevalence and viral load of Hepatatis B virus in COVID-19 vaccinated individuals in Swat.

37. Sami Ullah: Genetic analysis of a consanguineous Pakistani family segregating Joubert syndrome.

38. Tariq Aziz (2026): Comparison of antimicrobial potential of skin mucus of the different trout fishes isolated form Madyan Swat.

39. Ihsan Ali (2026): Isolation and characterization of probiotic Lactobacillus strains from Yogurt.

M. Phil (under supervision):

1. Mr. Asad Ali for his Thesis "Molecular detection of antibiotic resistance genes in methicillin resistant *Staphylococcus aureus* ".

2. Mr. Shahid Nawab for his Thesis "Comparative metagenomic analysis of the resistome gut-associated *Eschericia coli* in health individuals and patients with inflammatory bowel disease".

3. Mr. Shaukat Ali for his Thesis "Phytochemical characterization and biological investigations of *Gagea rawalpindica* from District Swat".

M.Sc. (Completed)

1. Asif Mehmood: Thesis title "Effect of hepatitis C virus (HCV) infection on human haemotology and SGPT level in District Swat" (2015).

2. Fazal Rahman: Thesis title "Incidence and characterization of urinary tract infection in pregnant women in District Swat" (2015).

3. Sabir Ali: Thesis title "Phylogenetic and biogeographic analysis of begomoviruses in Pakistan'' (2015).

4. Abdul Basir Khan: Thesis title "Effect of hepatitis B virus (HBV) infection on human haemotology and SGPT level in District Malakand'' (2015).

5. Inam Ullah: Thesis title "Phylogeny based Biogeographic analysis of genus *Nitrospira,* family *Nitrospiraceae''* (2015).

6. Tanweer Sattar: Thesis title "Phylogenetic and Phylogeographical analysis of *Aedes aegypti* and *Aedes albopictos''* (2015).

7. Neelab and Alwina Karim: Effect of marble industry effluent on soil quality, growth and productivity of vegetable crop, *Lycopersicum exculentum''* (2015).

8. Rabia Qureshi and Sana Karim: Thesis title "Effect of pesticides on haemotology, Throid stimulating hormone (TSH) and Tri – iodothyronine (T3) hormone of agriculture workers in Swat'' (2015).

9. Muhamamd Iqbal and Imran Anwar: Thesis title "Analysis of groundwater quality parameters in District Swat'' (2015).

10. Jan Khan and Tauqeer Rahman: Thesis title "Investigation of scientifically and economically important top 10 human protozoan in Pakistan '' (2015).

11. Azharullah Khan and Aurangzeb: Thesis title "Investigation of scientifically and medically important top 10 human associated viruses in Pakistan '' (2015).

12. Samiullah Khan and Mehwish Shah: Thesis title "Phylogenetic and biogeographic analysis of alphasatellites '' (2015).

13. Kalsoom Rehman and Husna: Thesis title "Investigation of scientifically and medically important top 10 human associated fungi in Pakistan '' (2015).

14. Uzma Iqbal and Erum: Thesis title “Investigation of scientifically and economically important top 10 human associated bacteria in Pakistan ’’ (2015).

15. Sidra Erum Ishaq and Hayam: Thesis title “Phylogenetic and biogeographic analyses of *Cotton leaf curl Kokhran virus*-Burewala” (2016).

16. Faisla Shah and Ali Shah: Thesis title “Incidence and clinical epidemiology of bacterial disease in Swat region” (2016).

17. Iftikhar Ahmad: Thesis title “Correlation among HBeAg, ALT and HBV DNA in hepatitis B carrier patients” (2016).

18. Muddasir Khan: Thesis title “Incidence and clinical epidemiology of infectious diseases in Peshawar region” (2017).

19. Mehtab Ali, Irfan Khan and Jaweria Niaz: Thesis title “Screening and incidence of hepatitis C virus infection in mentally disabled patients in Swat region” (2016).

20. Zafran Khan, Shahid Iqbal and Ijaz Ali Mian: Thesis title “Incidence of HCV in general population of District Swat” (2016).

21. Sania Ayub and Mahnoor Hamid: Thesis title “Incidence of Typhoid fever in Swat region” (2016).

22. Ayyaz Khan and Darya Khan: Thesis title “Bibliomeric analyses of worldwide publications on cotton leaf curl disease research” (2017).

23. Mr. Muhammad Ayaz and Maria Naseeb: Thesis title “Screening and prevalence of hepatitis B virus infection in mentally disabled population of District Swat” (2017).

24. Muhammad Ayaz and Riaz Ahmad: Thesis title “Investigation of HBV and HCV co-infection and their clinical epidemiology in garbage scavengers” (2017).

25. Iqbal Hussain, Shahid Ali, and Zakir Ullah: Thesis title “Incidence of hepatitis B Virus infection in garbage pickers of Malakand Division and Bajaur Agency” (2017).

26. Said Jasim Shah & Muhammad Sardar: Thesis title “Evidences of Mysterious Fish disease in River Swat, Pakistan” (2017).

27. Syed Ishfaq Ahmad, Naeem Akhtar, and Zeesahn Nasir for their Thesis “Characterization and quanitifcation of betasatellite research using bibliometric appreaoch” (2018).

28. Sabitullah, Ibrar Khan, and Ayub Khan, for their thesis “Bibliometric analysis of worldwide research on whitefly (*Bemicia tabaci*) ” (2018).

29. Ziaur Rehman and Salahuddin for their thesis “Characterization and quanitifcation of alphasatellites research” (2018).

30. Muhammad Naeem and Muhammad Zahid for their thesis “A preliminary study to find the pattern of infectious diseases in Buner” (2018).

31. Maneesha Kour for her thesis “Incidence of Chikungunya infection in Swat region” (2018).
32. Amjad Ali for his thesis “Correlation of different risk factors contributing to cardiac disease in population of District Swat” (2018).
33. Sidra Iqbal and Shehla Gul for their thesis “Incidence of Hepatatis C virus in Tehsil Khwazakheela District Swat” (2018).
34. Khalid Usman, Habibul Wahab and Hazrat Izhar “ Prevalence of rabies in Swat and Buner” (2018).
35. Naila Bibi and Hajra Umar “The prevalence of Dengue virus infection in Swat region” (2018).
35. Shamia Rehman “Constraints in insulin therapy for type II diabetes mellitus patients in District Swat” (2018).
36. Imad Khan and Sajad Gul for their thesis “Association of different risk factors contributing to Hepatitis B virus and Hepatitis C virus infections in hospitalized patients of Swat” (2019).
37. Iftekhar Ahmad Khan and Asma Haram “Prevalence of Hepatatis C virus infection in hemodialysis patients of District Swat” (2019).
38. Faiz Ul Haq and Wajahat Ullah “Incidence of malarial infection and response to antimalarial drugs in Swat and Dir Lower” (2019).
39. Sadiq Ahamd and Jamil Bacha (2019) for their thesis “Incidence, symptom s severity and distribution of geminivirus diseases in Swat region”.
40. Syed Saad Jan (2019) for his thesis “Molecular detection of begomovirus in *Curcubita maxima*”.
41. Atta Ur Rahman, Najla Khadim, and Nihal Khan (2019) for their Thesis “Isolation, identification and characterization of the causative agents of peach leaf curl disease in Swat”.
42. Muhammad Ibrar and Khalid Hussain (2019) for their Thesis “Protocol optimization for the isolation of *Taphrina* species from peach plant”.
43. Muhammad Hasham and Zakir Ullah Khan (2019) for their Thesis “Evaluation of resistance in local peach cultivars against peach curl disease”.
44. Naila Bibi and Lubna Zeb (2019) for their Thesis “Phytochemical screening and antimicrobial potential of leaves and stem of *Artemisia annua* against pathogenic microorganisms”.
45. Muhammad Imtiaz and Adnan Ur Rahman (2020). for their Thesis “Analysis of the performance of different exotic cotton varieties under the climatic conditions of Swat”.

46. Inam Ullah and Muhammad Abbas (2020). "Prevalence of COVID-19 like symptoms in school going children's in Babozia Swat".
47. Owais Khan, Jawad Ali and Waqar Ahmad (2020). "Effect of temperature and humidity on coronavirus infection in Pakistan".
47. Fida Muhammad, Farooq Khan, and Mehran Khan (2020). "Effect of various auxins on root organogenesis in stem cuttings of medicinally important *Crataegus oxycantha*".
48. Raies Khan, Saifur Rahman, and Sajad Ali (2020). "Identification of structural genes variation in novel coronavirus-2019 from SARS and MERS using bioinformatics approach".
49. Humaira Zeb, Anum Iqbal and Habib Ullah (2021). "Medicinal plants used for the treatment of dengue fever: A systematic review".
50. Sefura Farid, Hajra Bibi and Shakeela Naz (2021). "Antifungal activity of six *Mentha* species against pathogenic *Candida albicans*".
51. Mehran Albadar and Shoukat Ali Khan (2021). "Evaluation of antibodies response in vaccinated people of District Swat".
52. Asmat Khan and Jatesh Kumar (2021). "Green synthesis of silver nanoparticles by using aqueous root extract of *Cichorium intybus* and its antibacterial assay".
53. Irfan Ullah Khan and Rashid Anwar (2021). "Evaluation of antibodies response in COVID-19 recovered patients of District Swat".
54. Khalid Hussain and Saidullah (2021). "Assessment of the efficacy of COVID-19 vaccination in local population of Swat".
55. Asma Jahan Zeb and Mehran Musharaf (2022). "Comparative study of the complications produced in response to different COVID-19 vaccines during Omicron variant in population of Swat".
56. Huma Amir and Robi Aameer (2022). "Investigating the correlation of BCG and Tetanus toxoid vaccinated individuals with COVID-19 in the population of Swat".
57. Tariq Hussain and Ikram Ullah (2022). "Clinical and phenotypic investigations of families segregating primary microcephaly".
58. Syed Mushtaq Ali (2022). "Diversity of Apis mellifera in honeybee farms in District Swat".
59. Muneeba Bibi (2022). "Human skin diseases in females of District Swat".
60. Aitisam Ul Haq and Zia Ul Wadood (2023). Beeswax-based edible coating with food additives: A novel approach for enhancing the post-harvesdt quality and shelf life of peaches.
61. Urooj Bibi and Karishma Ahmad (2023). A combinational approach for the determination of antibacterial potential of *Sarcococca saligna* extraxcts and zinc oxide nanoparticles.

62. Mishal Rashid and Khan Mohammad (2024). In-silico design of multi-epitopes subunit vaccine against Guanarito Mammarenavirus.
63. Zakir Ullah and Muniba Gulalai (2024). Identification of natural african compounds as a potential inhibitors of HPV-16 E6 oncoprotein: a molecular docking approach for cancer therapeutics.
64. Rahul Kamar and Abubakar (2024). Prevalence of dengue outbreak of 2024 in Tehsil Batkhela District Malakand.
65. Sadiqa Bibi (2025). A comparative study of fingerprint patterns and ABO blood groups among obese and no-obese students of University of Swat.
66. Sohail Khan and Tanooja Kaur (2025). Epidemiological assessment of diarrheal outbreaks during summer seson (2024) in Mingora, Swat.
67. Manahil Naveed (2025). Prevalence and antibiogram study of *Burkholderia cepacia* complex isolated from clinical speciemens.
68. Sajad Ali (2025). Isolation of pathogenic bacteria from infected leaves of potato plants.
69. Syed Musa and Waseem Hassan Shah (2025). Differential antioxidant potential in two varieties of medically important stevia.
70. Ahmad Khan (2025). Determination of chlorophyll contents in two varieties of *Stevia rebaudiana.*
71. Sadaf Haroon, Urooj Akbar, and Babishta Noor (2025). Epidemiological profile of malaria in selected areas of District Swat.
72. Farman Ali Khan, Faisal Khan, Amjad Ali Khan, and Fahad Khan (2025). Antimicrobial activities and gram staining of pathogenic bacteria isoloated from infected plants.
73. Maria Fazal (2025). Isolation, identification and antimicrobial pattern of Enterobacter hormaechei from clinical speciemens.

Engagements as an external examiner for M. Phil/ PhD Thesis evaluation and viva voce

1. Mr. Zohaib Ali (2025), M. Phil Research Scholar, Department of Biotechnology & Genetic Enginnering, Hazara University, Mansehra.
2. Ms. Esha Nawaz, (2025), M. Phil Research Scholar, Centre of Biotechnology and Microbiology, University of Peshawar.
3. Mr. Muhammad Shoaib (2025), M. Phil Research Scholar, Centre of Biotechnology and Microbiology, University of Peshawar.
4. Mr. Abuzer Khan (2025), M. Phil Research Scholar, Department of Biotechnology, University of Malakand.

5. Ms. Maryam (2025), M. Phil Research Scholar, Department of Biotechnology, AWKUM, Mardan.
6. Ms. Nimra Saeed, M. Phil Research Scholar, Pak-Austria Fachhochschedule: Institute of Applied Sciences & Technology, Haripur.
7. Ms. Sana Laila (2024), M. Phil Research Scholar, Department of Biotechnology, AWKUM, Mardan.
8. Mr. Sajad Gul, (2024), M. Phil Research Scholar, Department of Biotechnology, AWKUM, Mardan.
9. Mr. Shah Fahad, (2024), M. Phil Research Scholar, Department of Biotechnology, AWKUM, Mardan.
10. Dr. Muhammad Tariq S/O Fatah Mulk Khan (2023), PhD Research Scholar in Molecular Biology, Liaqat University of Medical & Health Sciences, Jamshoro, Sindh, Pakistan.
11. Mr. Hanif Badshah (2023), M. Phil Research Scholar, Department of Biotechnology, University of Malakand.
12. Mr. Muhammad Aslam (2023), M. Phil Research Scholar, Department of Biotechnology, Shaheed Benazir Bhutto University Sheringal, Dir Upper.
13. Mr. Irfan Mehmood (2023), M. Phil Research Scholar, Department of Biotechnology, AWKUM, Mardan
14. Mr. Muhammad Khatir Zaman (2023), M. Phil Research Scholar, Department of Biotechnology, AWKUM, Mardan.
15. Mr. Ibad Ali (2022), M. Phil Research Scholar, Department of Biotechnology, AWKUM, Mardan.
16. Mr. Afrasiab Ahamd (2022), M. Phil Research Scholar, Department of Biotechnology & Genetic Engineering, Hazara University, Mansehra.
17. Ms. Afseen Naz (2021), M. Phil Research Scholar, Department of Biotechnology & Genetic Enginnering, Hazara University, Mansehra.
18. Ms. Hena Zahid (2021), M. Phil Research Scholar, Department of Biotechnology, AWKUM, Mardan.
19. Mr. Sher Shah (2021), M. Phil Research Scholar, Department of Biotechnology, AWKUM, Mardan.
20. Ms. Sobi Bibi (2021), M. Phil Research Scholar, Department of Biotechnology, AWKUM, Mardan.

21. Ms. Shehla Gauhar (2021), M. Phil Research Scholar, Department of Biotechnology, AWKUM, Mardan.
22. Mr. Rehan Shah (2021), M. Phil Research Scholar, Department of Biotechnology, AWKUM, Mardan.
23. Mr. Muhammad Aizaz (2021), M. Phil Research Scholar, Department of Biotechnology, AWKUM, Mardan.
24. Ms. Iqra (2021), Department of Biotechnology, AWKUM, Mardan.
25. Mr. Ghulam Rasool (2021), M. Phil Research Scholar, Department of Biotechnology & Genetic Enginnering, Hazara University, Mansehra.
26. Ms. Bibi Noor E Sehar (2021), M. Phil Research Scholar, Department of Biotechnology & Genetic Enginnering, Hazara University, Mansehra.
27. Evaluation of M. Phil Thesis of Ms. Afsheen Naz (2020), Department of Biotechnology & Genetic Engineering, Hazara University, Mansehra.
28. Evaluation of M. Phil Thesis of Ms. Husna Shams (2020), Department of Microbiology & Biotechnology, Abasyn University, Peshawar.
29. Evaluation of M. Phil Thesis of Ms. Munaza Hamid (2020), Department of Microbiology & Biotechnology, Abasyn University, Peshawar.
30. Evaluation of M. Phil Thesis of Mr. Wazir Zada (2019), Department of Biotechnology, Shaheed Benazir Bhatto University (SBBU), Sheringal, Dir (U), Pakistan.
31. Evaluation of M. Phil Thesis of Mr. Fazal Elahi (2019), Department of Biotechnology, SBBU, Sheringal, Dir (U), Pakistan.
32. Evaluation of M. Phil Thesis of Mr. Shah Saud (2019), Department of Biotechnology, Abdul Wali Khan University (AWKUM), Mardan.
33. Evaluation of M. Phil Thesis of Mr. Sadiq Ali (2019), Department of Human Genetics, Hazara University, Mansehra, Pakistan.
34. Evaluation of M. Phil Thesis of Mr. Syed Manzoor Ul Haq (2019), Department of Biotechnology, AWKUM, Mardan., Pakistan.
35. Evaluation of M. Phil Thesis of Ms. Masood Kausar (2019), Department of Biotechnology, AWKUM, Mardan.
36. Evaluation of M. Phil Thesis of Ms. Kainat Bibi (2019), Department of Biotechnology, AWKUM, Mardan.
37. Evaluation of M. Phil Thesis of Mr. Fawad Karim (2019), Department of Biotechnology, AWKUM, Mardan.

38. Evaluation of M. Phil Thesis of Ms. Faryal Ali (2019), Department of Biotechnology, AWKUM, Mardan.
39. Evaluation of M. Phil Thesis of Mr. Asad Khan (2019), Department of Biotechnology, AWKUM, Mardan.
40. Evaluation of M. Phil Thesis of Mr. Abdul Malik (2019), Department of Biotechnology, AWKUM, Mardan.
41. Evaluation of M. Phil Thesis of Mr. Faisal Khan (2019), Department of Microbiology & Biotechnology, Abasyn University, Peshawar.
42. Evaluation of M. Phil Thesis in respect of Ms. Syeda Andleeb Hussain (2018), Department of Biotechnology, AWKUM, Mardan.
43. Evaluation of M. Phil Thesis of Ms. Naila Wazir (2018), Department of Biotechnology, AWKUM, Mardan.
44. Evaluation of M. Phil Thesis in respect of Mr. Muhammad Tufail (2018), Department of Genetics, Hazara University, Mansehra.
45. Evaluation of M. Phil Thesis of Mr. Khalil-ur Rahman (2018), Department of Biotechnology, AWKUM, Mardan.
46. Evaluation of M. Phil Thesis of Mr. Amjad Khan (2017), Department of Biotechnology, University of Malakand.
47. Evaluation of M. Phil Thesis of Mr. Adnan Akbar (2017), Department of Biotechnology, University of Malakand.
48. Evaluation of M. Phil Thesis of Ms. Chand Bibi (2017), Department of Biotechnology, University of Malakand.
49. Evaluation of M. Phil Thesis of Mr. Razaullah (2015), Department of Biotechnology, University of Malakand.
50. Evaluation of M. Phil Thesis of Mr. Muhammad Imran (2014), Department of Biotechnology, University of Malakand.

Election duty as a Presiding Officer

- Performed Election duty as a Presiding Officer dated May 30, 3015 in Local Government Elections Khyber Pakhtunkhwa, 2015.

Live interview with News channels

- Performed a live interview in a program "Research in focus" with Campus Radio University of Swat, dated June 18, 2015 at 1 pm.

- Performed a live interview in a program "Rawane Chare" with Radio Buner, dated March 3, 2018 at 4 pm.
- Performed a live interview on coronavirus with Radio Shabqadar, Abaseen radio network, dated March 23, 2020 at 4:00 pm.
- Performed a live interview on coronavirus conspiracies with Campus Radio FM 100.4 University of Swat, dated April 30, 2020 at 11:15 am.

Research Interests

- Molecular characterization of economically important geminiviruses, satellites and satellite-like molecules associated with geminiviruses.
- Development of molecular diagnostic tools for geminivirus detection.
- Characterization of geminivirus gene function.
- Characterization of whitefly biotypes, influence on virus transmission efficiency and their distribution.
- Isolation of strong viral promoters and understanding the function of different viral open reading frames (ORFs).
- Genomics, Trascriptomics and proteomics of plant viruses and understanding molecular basis of resistance phenomenon against viral pathogens (Host-Virus-interactions).
- Development of Virus Induced Gene Silencing (VIGS) and micro RNA Induced Gene Silencing (MIGS) technology for heterologous protein expression.
- Role of developmental microRNA and microRNA targets in virus infection.
- Plant fungal pathogens causing disease in important horticulture plants.

Research/Project collaboration/ Linkages with National/International organizations

- Developed collaboration with Prof. Dr. Liu Chuan Liang, Institute of Cotton Research (ICR) of Chinese Academy of Agricultural Sciences (CAAS), China.
- Developed collaboration with Prof. Dr. Cao Ke, Zhengzhou Fruit Research Institute (ZFRI), CAAS, China.
- Developed collaboration with Prof. Dr. Yushanjiang Maimait, Institute of Plant Protection of Chinese Academy of Agricultural Sciences (CAAS), China.

- Developed collaboration with Prof. Dr. Judith K, Brown, School of Plant Sciences, University of Arizona, Tucson, USA.
- Developed collaboration with Prof. Dr. Hanu Pappu, Department of Plant Pathology, Washington State University, Pullman, WA 99164-6430, USA.
- Developed collaboration with Prof. Dr. Liangcan He, School of Medicine and Health at the Harbin Institute of Technology's Life Sciences and Medical Division, China.
- Developed collaboration with Dr. Imran Amin, Deputy Chief Scientist, National Institute for Biotechnology and Genetic Engineering, Faisalabad, Pakistan.
- Developed collaboration with Prof. Dr. Malak Bacha, Department of Microbiology, Quaide Azam University, Islamabad, Pakistan.
- Developed collaboration with Dr. Ishtiaq Hassan, Associate Professor, Department of Biotechnology and Genetic Engineering, Hazara University Mansehra.

References

References would be provided on request.