

## **DR. MANZOOR HUSSAIN**

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### **EDUCATION:**

**2018: Ph.D. (Microbiology & Molecular Genetics)**

Department of Microbiology and Molecular Genetics (MMG ),  
University of the Punjab, Lahore.

**2002: M. Phil (Molecular Biology)- Grade: A**

National Centre of Excellence in Molecular Biology (CEMB),  
University of the Punjab, Lahore.

**1999: M.Sc. (Chemistry)- Division: 1<sup>st</sup>**

University of the Punjab, Lahore.

**1997: B.Sc. (Botany, Zoology, Chemistry) - Division: 1<sup>st</sup>**

University of the Punjab, Lahore.

**1995: F.Sc. (Physics, Chemistry, Biology)- Division: 2nd**

Government Degree College, Satellite Town, Gujranwala.

**1993: Matriculation: Division: 1<sup>st</sup>**

Government High School, G.T. Road, Gujranwala.

### **EMPLOYMENT RECORD:**

January 15, 2002 – June 30, 2007:

**Research Officer (BPS-17)** at Centre for Applied Molecular Biology (CAMB)

July 01, 2007- June 07, 2018:

**Senior Research Officer/Assistant Professor (BPS-18)** at Centre for Applied Molecular Biology (CAMB)

June 08, 2018- May 26, 2022:

**Assistant Professor on adhoc (BPS-19)** at Centre for Applied Molecular Biology (CAMB), University of the Punjab, Lahore

May 27, 2022- To date:

**Senior Research Officer Cum Assistant Professor (BPS-19)** at Centre for Applied Molecular Biology (CAMB), University of the Punjab, Lahore

August 11, 2026- To date:

**Incharge**, Department of Allied Health Sciences, University of the Punjab, Lahore

**FOREIGN TRAININGS ON FORENSICS:**

1. A Training Course on Forensic DNA STR analysis was successfully completed at Indianapolis Marion County, Forensic Services Agency, Indiana, USA, from October 22, 2003, to January 14, 2004.
2. A two-day training on “Forensic & Doping control Analysis by LC/MS/MS” was attended at Dubai Crime Laboratory from September 20-21, 2006.
3. A two-day training on “ABI 7500 Real Time PCR-Advanced training course for forensic applications” was attended at Applied Biosystems Laboratory, Dubai from November 07-08, 2007

**NATIONAL TRAININGS ATTENDED:**

1. A revolution in crime investigation. Attended a training workshop on Crime Scene Search and Modern Forensic Techniques in police investigation from January 12-17, 2003, jointly organized by Indianapolis Marion County, Forensic Services Agency, USA, and CEMB, University of the Punjab, Lahore.
2. A training workshop on Modern Forensic Techniques for Crime Scene Search and Investigations from March 08-10, 2004, jointly organized by DDJN Institute of Forensic Science, Indianapolis, USA, and CEMB, University of the Punjab, Lahore.
3. A training workshop on Modern Forensic Techniques for Crime Scene Search and Investigations from October 11-12, 2004, jointly organized by DDJN Institute of Forensic Science, Indianapolis, USA, and CEMB, University of the Punjab, Lahore.
4. Attended a training on “Internal Auditing, Corrective & Preventive Actions held at CEMB, University of the Punjab, Lahore on 12.03.2009
5. Attended a training workshop on “Project Monitoring & Evaluation System (PMES) software” from April 10-11, 2010, at COMSATS Institute of Information Technology, Lahore.
6. Attended a two-day training workshop on “Planning, Establishing and Managing technology incubators” at NUST Islamabad on Nov 06-07, 2013
7. Attended a two-day training workshop on “Next Generation Sequencing” at the Institute of Agricultural Sciences, University of the Punjab, Lahore, on December 04-05, 2015

8. Attended a PSF workshop on “Funds Winning Opportunities” on 03.03.16 at the University of the Punjab, Lahore.
9. Attended a PSF workshop on “Establishing & Leading a Research Group” held at COMSATS, Lahore, on May 02-03, 2016.
10. Attended a 2-day workshop on “Writing winning Research Proposals” at COMSATS Institute of Information Technology, Islamabad, on January 30-31, 2017
11. Attended a three-day training course on “Public-Private partnerships issues and policies” held at AHK National Centre for Rural Development, Park Road, Chak Shahzad, Islamabad, from December 26-28, 2022.

### **PROJECTS:**

1. Worked as **Project Director** in the project entitled “Establishment of Forensic Services laboratory at CEMB” funded by the Higher Education of Pakistan (37.99 Million Rupees) and established the 1<sup>st</sup> Forensic DNA testing laboratory in Pakistan.
2. Worked as Co-PI in the IPFP project entitled “Detection and Identification of Dengue Virus by rapid and cost effective RT PCR method.”
3. Won the research project grant of the University of the Punjab for the fiscal years 2015-16, 2019-20, 2022-23, 2024-25 & 2025-26.

### **COMMUNITY SERVICES:**

#### **a) Forensic DNA Analysis Services:**

Provided Forensic DNA analysis services to the Law Enforcement Agencies & honorable Courts throughout Pakistan in more than 3000 cases, including rape, murder, sodomy, bomb blast, dead body identification, and parentage verification cases during 2004-13

#### **b) Hands on Trainings provided:**

1. One week training was provided to the two veterinary officers of Live Stock & Dairy Development Department, Punjab on “DNA amplification through PCR and multiplexing techniques”.
2. One week training on “Forensic DNA Analysis for Human Identification” was provided to the 06 officials of the Forensic Medicine Department of Bannu Medical College, KPK (May 12-16, 2014)
3. Two weeks training on “Forensic DNA analysis” was provided to a Research Associate, HEJ Karachi (Feb 23- March 06, 2015).

4. Provided 4-week training on “Forensic Serology & DNA” from March 06 – April 02, 2017 to the Forensic Science Laboratory, Peshawar official

**c) Lectures Delivered (Training workshops/conferences/seminars:**

1. To promote the best use of DNA technology in crime investigations, 09 training workshops (3<sup>rd</sup>-11<sup>th</sup>) were conducted (during 2004-2009) for Investigation officers of various ranks, in which more than 500 participants were trained on crime scene search and proper collection of biological evidence material from the crime scene. (organizer & speaker)
2. For proper collection of evidence material in sexual assault cases, 02 training workshops were conducted for medico-legal lady doctors (participants from each district of Punjab) were trained during 2008-09 (organizer & speaker).
3. Delivered lectures on “Role of DNA in crime investigation” in the police training workshop held at Counter Terrorism Department, Police Training School, Chung Lahore on 28.12.2010
4. Delivered lectures to the police officers on “crime scene search and modern forensic techniques for crime investigation” in the police training workshop held at Counter Terrorism Department, Police Training School, Chung Lahore on 10.05.11, 22.09.11, 13.01.12 and 27.01.12
5. Delivered lectures on “DNA and its role in crime investigation” in the police training workshop organized by the Police School of Information and Analysis, Chung, Lahore, on 25.04.2012 and August 2012.
6. Participated as an invited speaker in the seminar on “Forensic DNA Typing: Role of Judiciary and Investigating Agencies” held at Liaquat University of Medical & Health Sciences (LUMHS), Jamshoro on August 27, 2016. The seminar was chaired by Honourable Mr. Justice Amir Hani Muslim (Honourable judge of Supreme Court of Pakistan)
7. Delivered a detailed talk /presentation on “Forensic Investigation Techniques” at institute of Applied Psychology, university of the Punjab, Lahore on 05-12-2017 and 26.02.19 to the students of BS-VII (M&R), MSc III (M&R) and Ph.D
8. Invited speaker in ForensX 2024: International Conference on Emerging Trends in Forensic Science” held on July 02-04, 2024 at University of Swat.
9. Resource person in the training workshop titled “Collection and preservation of biological evidence material at the crime scene” held in ForensX 2024: International Conference on Emerging Trends in Forensic Science” University of Swat.

**d) Court testimony:**

Attended several District & Sessions courts of Punjab province, anti-terrorism courts and Lahore High Courts to testify DNA test reports issued in various criminal and paternity cases.

### **ACHIEVEMENTS /AWARDS:**

1. Established the first state-of-the-art Forensic DNA Laboratory in the country at CAMB to provide DNA testing facility in criminal and paternity cases. The laboratory provided DNA testing services in more than 3500 cases, including rape, murder, sodomy, dead body identification and parentage.
2. Established Molecular Diagnostic Laboratory at CAMB to provide PCR-based diagnosis of Hepatitis B and C at highly affordable rates. The laboratory has provided analytical services to the general public in more than 55,000 tests.
3. Won Punjab University Teacher's Performance Evaluation Award for the years 2015, 2016, 2017, 2018 & 2025
4. Won the Punjab University Research Publication Award for the years 2016, 2018, 2019 & 2020.
5. Re-established the department of Allied Health Sciences at the University of the Punjab in August 2025 and successfully launched four BS Programs, including
  - Doctor of Physical Therapy (DPT)
  - Medical Laboratory Technology (MLT)
  - Audiology
  - Optometry & Vision sciences

### **WORKSHOPS / SEMINARS ORGANIZED:**

1. Organized 9 training workshops for investigating agencies in collaboration with the counterpart laboratory USA on "Modern Forensic Techniques for crime scene search & Investigations" held at CAMB from 2004-2009."
2. Organized 2 mini workshops on "DNA for Justice" in collaboration with Strand Analytical Laboratories, USA for the judiciary and Lawyers at CAMB (2006-8)
3. Organized and delivered lectures therein in the 1<sup>st</sup> training workshop for medico-legal doctors on collection & preservation of evidence material in sexual assault cases held at CAMB on July 19, 2008.
4. Organized and delivered lectures therein in the 2<sup>nd</sup> training workshop for medico-legal doctors on collection & preservation of evidence material in sexual assault cases held on March 28, 2009 organized by CAMB Lahore."
5. Organized a one-day symposium on "DNA in Crime Investigation" held at Al-Razi Hall, University of the Punjab, Lahore on April 05, 2018 and served as one of the speakers. More than 200 participants attended the symposium.

### **SCIENTIFIC SYMPOSIA/SEMINAR ATTENDED:**

1. One-day seminar on “Forensic application of DNA” held at the Department of Forensic Medicine and Toxicology, FMH College of Medicine and Dentistry, Lahore.
2. One-day seminar on “Real Time PCR results for Real Time Patient Management” held at Centre for Applied Molecular Biology, University of the Punjab, Lahore
3. Attended two days of the “DNA Strategy Symposium” organized by British Council and PFSA at Pearl Continental Hotel, Lahore.
4. Attended a seminar on “Advances in Nucleic Acid Technology” at Centre for Applied Molecular Biology, University of the Punjab, Lahore.
5. Attended a one-day seminar on “World Intellectual Property Day” at Flatti’s Hotel, Lahore.
6. Attended seminar on “Counting Violent Extremism Orientation” jointly organized by University of the Punjab and Centre for Health and Gender Equality (CHANGE) at CEES.
7. Attended a seminar on “NGS Technology (Illumina) and its applications” at CAMB, University of the Punjab.
8. Attended a one-day seminar on “Bio-safety & Bio-security” held at CEMB
9. Attended one-day international symposium on health sciences jointly organized by CAMB and CEMB
10. Attended a 3-day national conference on “Emerging trends in Bioinformatics and Biosciences” at Hazara University, Mansehra, KP.
11. Attended “National Forensic Science Conference” organized by National Forensic Science Agency (NFSA), Islamabad held at Marriott Hotel, Islamabad.

### **PARTICIPATION IN SCIENTIFIC EXHIBITIONS:**

1. Acted as focal person to present CAMB products and services in the S&T Exhibition held at Dera Allah Yar & Usta Muhammad, Baluchistan on May 18-19, 2012. CAMB managed to display different posters, banners & brushers to create the awareness among the masses. The Centre also offered free services for screening of HCV & HBV in the people of that community.
2. Presented CAMB highlights in the scientific summit “Invention & Innovation Summit-2012” organized by Pakistan Science Foundation (PSF) at University of the Punjab, Lahore on June 18, 2012. CAMB was declared as winner of the Invention & Innovation Summit-2012 and was awarded Winning Shield.

3. Managed all the arrangements to present CAMB in the “Invention & Innovation Summit-2013” organized by Pakistan Science Foundation (PSF & IRP) at the University of the Punjab, Lahore, on April 9-10, 2013
4. Participated in presenting CAMB in “**DICE-2013, distinguished innovations, collaborations and Entrepreneurship**”, jointly organized by Pakistan Council for Science & Technology (PCST) and University of Gujrat at its Hafiz Hayat campus, Gujrat, from 1-2<sup>nd</sup> October 2013.
5. Managed as focal person to present CAMB in the science & technology exhibition organized by the Ministry of Science & Technology in the Punjab Youth Festival 2014 held at the International Expo Centre, Lahore, on March 01-03, 2014. CAMB not only presented its products, services, and activities through brochures, skins, and backdrops, but also offered free screening tests for HCV and HBV to young visitors.
6. Managed as focal person to present CAMB activities in the science & technology exhibition 2015 organized by the Ministry of Science & Technology at PCSIR Lahore on April 13, 2015.
7. Presented CAMB products and services in the scientific summit “Invention & Innovation Summit-2016” held at the University of the Punjab, Lahore, on March 02-03, 2016.
8. Presented CAMB products and services in the PAK-CHINA Business Forum (PCBF) held at Expo Centre, Lahore, on March 19-22, 2016.
9. Participated and presented CAMB products and services in the “Trade Promotion and Industrial Development Conference & Exhibition (TPIDCE 2016)” held at the Sheikhpura Chamber of Commerce and Industry on April 29, 2016.
10. Participated as a focal person and presented the products and services of CAMB in the 6<sup>th</sup> Inventions to Innovation Summit 2017 held at the University of the Punjab, Lahore on March 08-09, 2017, and won the awards for two projects. A letter of appreciation was also received from the Director CAMB in the same context.
11. Participated as a focal person and presented the products and services of CAMB in the 7<sup>th</sup> Invention to Innovation Summit 2018 held at the University of the Punjab, Lahore, on March 07-08, 2018, and won the awards for two projects.
12. Participated as a focal person and presented the products and services of CAMB in the 9<sup>th</sup> Invention to Innovation Summit 2024 held at the University of the Punjab, Lahore, on Feb 27-28, 2024, and won the 1<sup>st</sup> Prize.

### **RESEARCH THESIS SUPERVISED:**

- I have supervised **37 MPhil students** pursuing their degree in Molecular Biology and Forensic Sciences at CAMB.
- 4 MPhil students (ongoing)
- 1 PhD student (ongoing)

### **PUBLICATIONS:**

1. Nadeem, A., Babar, M. E., **Hussain, M.**, & Tahir, M. A. (2009). Development of pentaplex PCR and genetic analysis of X chromosomal STRs in Punjabi population of Pakistan. *Molecular biology reports*, 36(7), 1671-1675
2. Shafique, M., Shahzad, M. S., Perveen, U., Parveen, R., Ali, A., **Hussain, M.**, ... & Husnain, T. (2015). Allele frequency distribution of 10 MiniSTRs in the Pashtun population of Pakistan. *International journal of legal medicine*, 129(3), 467-468.
3. Shan, M. A., Tahira, F., Shafique, M., **Hussain, M.**, Perveen, R., Shahzad, M., ... & Iqbal, M. (2015). Estimation of different biochemical intensities in drinking water from eastern region of Lahore city. *Advancements in Life Sciences*, 2(3), 131-134
4. Shafique, M., **Hussain, M.**, Shan, M. A., Shahzad, M., Hussain, S., Hussain, N., ... & Iqbal, M. (2015). Genetic diversity of 15 autosomal STR loci in the population of Southern Punjab Pakistan. *Forensic Science International: Genetics*, 19, e1-e2
5. Shan, M. A., **Hussain, M.**, Shafique, M., Shahzad, M., Perveen, R., & Idrees, M. (2016). Genetic distribution of 15 autosomal STR markers in the Punjabi population of Pakistan. *International journal of legal medicine*, 130(6), 1487-1488.
6. Shahzad M, Shafique M, **Hussain M**, Shan MA, Perveen R, Ziaurehman, Idrees M. Successful DNA Profiling for Identification of burnt Families from their bones using AmpFℓSTR Identifiler® Plus Kit (2016). *Adv. Life Sci.* 3(2); 59-62
7. Shafique, M., Shahzad, M.S., Rahman, Z., Shan, M.A., Perveen, R., Shahzad, M., **Hussain, M.**, Shahid, A.A. and Husnain, T., (2016). Development of new PCR multiplex system by the simultaneous detection of 10 miniSTRs, SE33, Penta E, Penta D, and four Y-STRs. *International journal of legal medicine*, 130(6), pp.1409-1419

8. **Manzoor Hussain**. “Effect of Post-coital intervals on DNA STR profiling of semen donor in the post-coital vaginal swabs.” Punjab Univ. J. Zool. (2017), Vol. 32 (1), pp. 075-079
9. Wahid, B., Wasim, M., Saleem, K., Waqar, M., Wahid, K., **Hussain, M.**, & Idrees, M. (2018). Poor glycemc control and abrupt onset of diabetes in HCV patients receiving direct-acting antiviral drugs: case series. *Future Virology*, 13(08), 525-528.
10. Manzoor, S., Younis, S., **Hussain, M.**, Ehsan, F., Sheikh, N., & Abbasi, M. H. (2019). Efficacy of direct-acting anti-viral therapy on chronic, naïve hepatitis c virus patients of punjab, pakistan: a cross-sectional study. *Journal of biological regulators and homeostatic agents*, 33(1): 105-108
11. Anwar, I., Hussain, S., Rehman, A. U., & **Hussain, M.** (2019). Genetic variation among the major Pakistani populations based on 15 autosomal STR markers. *International journal of legal medicine*, 133(4), 1037-1038.
12. **Hussain, M.**, Chaudhry, A., & Bashir, H. (2019). Enhance production of alkaline protease by chemical mutagenesis of Bacillus species. *BioCell*, 43(5-1), 312-322
13. Shahzad, M., **Hussain, M.**, Shafique, M., Perveen, R., & Sheikh, N. (2020). Population genetic data of 30 insertion–deletion markers in Punjabi population of Pakistan. *International Journal of Legal Medicine*, 134(2), 511-512
14. Aslam, M. A., **Hussain, M.**, Khan, K., Zahra, F. T., Shafique, M., & Javeed, S. (2020). Haplotype diversity of 17 Y-STRs in Sheikh population of Punjab. *International journal of legal medicine*, 134: 1325-1326.
15. Zahra, F. T., **Hussain, M.**, Khan, K., Aslam, M. A., Shafique, M., Rubab, A., & Javeed, S. (2020). Genetic polymorphism of Y-chromosomal STRs in Gujjar population of Punjab. *International Journal of Legal Medicine*, 134: 1333-1334
16. Mateen, R. M., Sabar, M. F., Hussain, S., Parveen, R., & **Hussain, M.** (2021). Familial DNA analysis and criminal investigation: usage, downsides and privacy concerns. *Forensic Science International*, 318, 110576.
17. Amjad, S., Akram, A., Iqbal, M., **Hussain, M.**, & Khan, M. (2021). Analysis of ALT and AST levels in HCV infected patients. *Advancements in Life Sciences*, 8(4), 349-354

18. Bilal, M., Bashir, H., Ameen, R., Sumrin, A., **Hussain, M.**, & Manzoor, S. (2022). Anti HCV activity and expression inhibition of HCC markers by protein extract from *Iberis gibraltarica*. *Brazilian Journal of Biology*, 84.e252676
19. Mustafa, Usama, Sana Shoukat, and Manzoor Hussain. "Optimization of Autosomal STR Markers for Equine Genotyping Using Multiplex PCR: Optimizing Markers for Equine Genotyping." *Futuristic Biotechnology* (2024): 34-40.
20. Maqsood, Quratulain, Rida Fatima, Fatima Razaqat, Tahir Mehmood, Shinawar Waseem Ali, and Manzoor Hussain. "Revolutionizing Water and Wastewater Treatment: AI and Machine Learning-Driven Approaches for Advanced Solutions." *Desalination and Water Treatment* (2025): 101432.

**MISCELLANEOUS:**

- Ex-member of Executive Committee /BOG of CAMB (2010-2015)
- Member of the Board of Faculty, Superior University Lahore
- Member of the Board of the Faculty of Health Sciences, University of the Punjab
- Member of the Board of Studies of the Department of Allied Health Sciences, University of the Punjab, Lahore
- Member of the Board of Studies of the Department of Allied Health Sciences, University of Kamalia
- Member of various departmental committees, including DDPC
- Member of the admission committee