

Samra Kousar

Assistant Professor

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Academic Qualification

- **Ph.D. (2023):** CEMB, University of the Punjab, Lahore
Thesis Title: Case-Control Chronic Obstructive Pulmonary Disease association studies with SNP Variants of Potential Candidate Genes in Pakistani Population. (Molecular Biology)
- **M.Phil. (2016):** CEMB, University of the Punjab, Lahore
Thesis Title: Identification of Genetic Determinants of Hearing-Impaired Families from Central Punjab region of Pakistan. (Molecular Biology)
- **M.Sc. (2007):** University of the Punjab, Lahore
Thesis Title: Synthesis, Spectroscopic and In-vitro Antibacterial Studies of Transition Metal Complexes of Schiff Base derived from Benzil and sulphanilamide. (Chemistry)

Professional Experience:

- **Assistant Professor (BPS19);** Centre of Excellence in Molecular Biology (CEMB); University of the Punjab, Lahore. Pakistan (January 2024 till date).
- **Research Officer cum Lecturer (BPS 18);** Centre of Excellence in Molecular Biology (CEMB); University of the Punjab, Lahore. Pakistan (January 2010 to December 2023).
- Working as **Research Officer (BPS 17)** in National Centre of Excellence in Molecular Biology (CEMB) from April, 2008 to December 2009.
- 6 months working experience as **Quality control Analyst** in Zenith Chemicals (Pvt) Ltd., Lahore.

International Research work Experience:

- **Research fellow** in Department of Health sciences, university of Leicester, United Kingdom from Dec.2021 to May 2022.
University of Leicester # 209056240
- January 21-27, 2018: Global Young Scientists Summit (GYSS) 2018

Grants/Research Project:

- “Cost-effective BRCA1/2 screening for early cancer detection” from Pakistan academy of Science of worth 10.5M.

- **NRPU #8460**“Study of association of potential candidate SNPs residing on chromosome 14 with inherited Emphysema in local population” of worth 1.87M.(completed)
- VDR and VDB gene expression studies in COPD and Asthma patients of Lahore, Pakistan. (Punjab University Research Grant)
- Genetic characterization of COPD in Pakistani Population in Collaboration with Pulmonology department of Fatima memorial Hospital, Lahore (ongoing)
- Collaborative work 'Common and rare genetic variants in respiratory health: the UK Biobank Lung Exome Variant Evaluation (UK BiLEVE) consortium' with department of Health sciences, university of Leicester UK.

Scientific Skills:

- Fully trained at MinIon (ONT) used for BRCA1/2, Lung Cancer and CFTR (cystic Fibrosis) Screening
- Genetic association of COPD in Pakistani population
- Exclusion Studies of Deafness Families
- Skilled at using 3100 Genetic analyzer and 3730 DNA analyzer.
- Skilled at using Gel Electrophoresis, SDS-PAGE, performing Genotyping and Sequencing PCR followed by precipitation method and Real Time PCR.
- Good analysis, logic building and problem-solving skills.
- Skilled at using PLINK v1.9. Haploview, SPECTRE, and LINUX.
- Skilled at using HPLC (Gradient and Isocratic), Spectrophotometer (FT-IR and UV), Real time PCR.

Honors and Awards:

- **Abstract/travel grant for WAO/BSACI** conference held at Edinburg UK in 2022
- **International Research Support Scholarship** for six months for advance studies to University of Leicester UK in 2021.
- **Performance evaluation award (2020)**
- **Performance evaluation award (2019)**
- **Incentive Award on Research Publications (2019)**
- **Performance evaluation award (2018)**
- **Letter of Appreciation** by ORIC Punjab University for organizing CEMB Technology Stall at 7th invention to innovation summit (2018)
- **Letter of appreciation** awarded in recognition as organizer of 2nd International Symposium on Advances in Molecular Biology of Plants and Health Sciences held on 21-23 November, 2017 at Centre of Excellence in Molecular Biology, University of the Punjab Lahore.
- **Research Incentive Award (2016)**
- **Letter of appreciation** awarded in recognition as organizer and participant of International Symposium on Advances in Molecular Biology of Plants and Health Sciences held on 29-31 December, 2015 at Centre of Excellence in Molecular Biology, University of the Punjab Lahore.

MEMBERSHIPS:

- Member of International association for study of lung cancer (IASLC) Member ID 531103
- Member of European Academy of Allergy and Clinical Immunology(EAACI 18568)
- Member World Allergy Organization.
- ORCID: 0000-0002-5388-3498
- BSACI member (membership #746)
- Web of Science Researcher ID is AAQ-7730-2020.
- Working as treasurer GULLS Association.

- Working as Joint Secretary of Congress of Molecular Biology, CEMB.
- Journal Club In charge of Centre of Excellence in Molecular Biology from January 2012

Publications:

Submitted:

“Deciphering the Genetic Interplay between COPD and Lung Cancer: The role of GATM Mutations” (European Journal of Human Genetics).

"Impact of VDR Gene Expression and SNP rs4516035 on Asthma and COPD in a Pakistani Cohort" (Hormone and Metabolic Research).

Published:

- Case Study: Analyzing CFTR Mutations and SNPs in Pulmonary Fibrosis Patients with Unclear Symptoms" Sahar Yousaf, Sumaira, Iqbal Bano, Atia Rehman, Samra Kousar, Muhammad Usman Ghani, Mariam Shahid 22 September 2024 <https://doi.org/10.1155/2024/8836342> Case Reports in Medicine
- "COPD Risk in Pakistani Punjabi Population: Role of GATM, PSMA4, and CHRNA5-A3-B4 Gene Variants" Samra Kousar, Atif Mahmood, Mohsin Sajjad, Atia Rehman, Ujala Tayyab, Ayesha Shahbaz Khan, Mariam Shahid: International Journal of Pharmacy & Integrated Health Sciences (<https://doi.org/10.56536/ijpihs.v5i2.168>)
- “Association of ORMDL3 single nucleotide polymorphic variants with bronchial asthma in Pathan population” Waqas Safir, Saba Altaf, Peerzada Fawad Ullah Jan, Nodia Shujaat, Fahim Ullah Khan, Atia Rehman, Samra Kousar, Muhammad Usman Ghani, Muhammad Farooq Sabar, Mariam Shahid, <https://doi.org/10.1016/j.genrep.2024.101958>
- "Risk loci for Chronic Obstructive Disease reside on Chromosome 14: a Case-Control study on the Pakistani population". Peerzada Fawad Ullah Jan, Samra Kousar, Atif Mahmood, Sarooj Nadeem, Kausar Malik, Waqas Safir, Nodia Shujaat, Fahim Ullah Khan, Mariam Shahid: Journal of Ayub Medical College 2023 Apr-Jun;35(2):203-209.Doi: 10.55519/JAMC-02-11430.
- Single nucleotide polymorphism on chromosome 14 associated with emphysema in local Pakistani population S Kousar, M Shahid CLINICAL AND EXPERIMENTAL ALLERGY 52 (8), 1039-1039
- Aslam R, Shahid M, Bano I, Ayoub M, Sabar MF, Altaf S, Kousar S, Ghani MU, Husnain T, Shahid AA, “Major Histocompatibility Complex class II Polymorphic variants are associated with Asthma predisposition in the Punjabi population of Lahore, Pakistan”, Clinical Respiratory Journal 2021;15:374–381.
- Genetic contribution of GJB2 gene to hearing impairment in Pakistan H Tariq, K Zaigham, S Kousar, A Azhar Advancements in Life Sciences 7 (1), 38-43
- Shahid M, Tayyab U, Kousar S, Ghani MU, Sabar MF, Husnain T (2019). rs153109 as possible indicator of effectiveness of Vitamin D supplements for suppressing COPD symptoms, CHEST, Vol. 155, Issue 4, p219A

- Sabar MF, Akram M, Awan FI, Ghani MU, Shahid M, Iqbal Z, Kousar S, Idrees M (2018). Awareness of Asthma Genetics in Pakistan: A Review with Some Recommendations, *Adv. Life Sci.* 6(1): 1-10
- Sabar MF, Shahid M, Bano I, Ghani MU, Akram M, Awan FI, Kousar S, Iqbal Z, Altaf S, Husnain T (2017). “rs12603332 is associated with male asthma patients specifically in urban areas of Lahore, Pakistan”; *Journal of Asthma* ;54(9):887-892
- Sabar MF, Kousar S, Zafar AU, Shahid M (2013). “PEG-interferon conjugates: Effects of length and structure of linker”, *Pak. J. Pharm. Sci.*, Vol.26, No.2, pp.425-430
- Naz S, Li L, Riazuddin SA, Shahid M, Kousar S, Sieving PA, Hejtmancik JF, Riazuddin S (2010). “A novel locus for autosomal recessive Retinitis Pigmentosa in consanguineous Pakistani family maps to chromosome 2p”, *Am.J.Ophthalmol.*, 149(5): 861-6
- Kaul H, Riazuddin SA, Shahid M, Kousar S, Butt NH, Zafar AU, Khan SN, Husnain T, Akram J, Hejtmancik JF, Riazuddin S (2010). “Autosomal recessive congenital cataract linked to EPHA2 in a consanguineous Pakistani family.” *Mol.Vis.* Mar.24; 16:511-7

Abstract/Poster Presentation:

- “Single nucleotide polymorphism on chromosome 14 associated with Emphysema in local Pakistani population” at WAO/BSACI conference held from 25-27th April 2022 in Edinburgh UK.
- “Genetic Variants Associated with Emphysema in Local Pakistani Population” (2021), Abstract book, *Advancements in Life Sciences*, page 100
- “Association of rs11558261, rs1057516555, rs199422212 and rs877081 with Chronic Obstructive Pulmonary Disease in Population of Lahore, Pakistan” (2021), Abstract book, *Advancements in Life Sciences*, page 115
- Kousar S, Ayub M, Shahid M, Aslam R, Hussain T(2019). Case-Control association studies of HLA-B variants with Asthma in local population of Lahore, Pakistan. <http://pu.edu.pk/icpu2019/index.html>
- “Case-control Association Study of HLA-B variant (rs866916063) with Asthma in local population of Lahore, Pakistan” (2018), Abstract book, *Advancements in Life Sciences*, page 50
- Muhammad ayub, Mariam shahid samra kousar saba altaf, (2017)Case-control Association Study of HLA-B variant (rs866916063) with asthma in local population of Lahore, Pakistan. <http://www.als-journal.com/downloads/Proceedings2017.pdf>
- Saba altaf, Mariam shahid, samra kousar (2017).Association between genetic variant (rs11650680) of TOP2A and early onset asthma in population of Lahore, Pakistan. <http://www.als-journal.com/downloads/Proceedings2017.pdf>
- Shahid M., Sabar M.F., Rahman Z., Bano I., Ghani M.U., Kousar S., Akram M., Husnain T. (2015). Urbanization triggers asthma in ‘C’ allele carriers for rs12603332 European Academy of Allergy and Clinical Immunology (EAACI), P04, Istanbul, Turkey.

Scientific Symposia / Workshops Attended:

- A Symposium on Present status and Future trends in Molecular Biology Organized by the Center of Excellence in Molecular Biology and Centre for Applied Molecular Biology, University of the Punjab, Lahore, Pakistan. Mar. 25-28, 2009.
- An international workshop on “Modern techniques in Combinatorial Chemistry” held at COMSTECH Islamabad from 14-16 June 2011.
- A One Day Biosafety Training Workshop Organized by National academy of young Scientist and University of The Lahore on 9 July 2011.
- Six Week Course on “Communication Skill Development” held at Institute of Chemical Engineering University of the Punjab Lahore from 18 July to 26 August 2011.
- A One Day Workshop on “Introduction and Applications of Fluorescent Microscopy” held at Department of Microbiology and Molecular Genetics Punjab University Lahore 24 September 2011.
- A One Day Workshop on “Young Researcher’s Skill Development” held at National University of Science and Technology Islamabad 26 November 2011.
- A One Day Workshop on “Qualitative Data Analysis through Software NVIVO” held at Institute of Research promotion, University of management and Technology on 28 January 2012.
- A One Day Symposium on “DNA Barcoding: A Promising Tool for Species Identification and Biodiversity Digitization” held at National Institute for Biotechnology and Genetic Engineering Faisalabad on 30 January 2012.
- Three Days workshop on Primer to Recombinant DNA Technology held on September 14-16, 2012 at The University of Lahore, Pakistan.
- 11th National Training course on “Modern Techniques in Molecular Biology” held at National institute for Biotechnology and Genetic Engineering Faisalabad from 11-15 February 2013.
- Two days Invention to Innovation Summit 2013 and UIP Exhibition of Indigenous Technologies held at University of the Punjab Lahore from April 9-10, 2013.
- 3rd Invention to Innovation Summit 2014 on “Technologies having potential for Commercialization” on March 19-20, 2014 at University of The Punjab, Lahore.
- Next generation Sequencing Data Analysis Workshop on October 28, 2014 held at COMSATS Institute of information Technology Islamabad.
- Hands On Training Workshop on “Next Generation Data Analysis” from 2-4 September 2015 at COMSATS Institute of information Technology Islamabad
- ICGEB course on Basic Biotechnology Techniques” From March 07-09, 2016 held at CEMB, University of Punjab Lahore.
- One week training course on “Planning of cotton production, land preparation, weed control pest and disease control and harvesting” held at National Centre of excellence in Molecular Biology, university of The Punjab Lahore from 12-16 December 2016.
- Two days’ workshop on “Bioinformatics and Computational Drug Designing” held at Department of Biochemistry, Kinnaird College for Women Lahore from 27-28 January 2017.
- 6th Invention to Innovation Summit 2017 on “Buy and Sell Technology” on March 08-09, 2017 at University of The Punjab, Lahore.
- Training workshop on Behavioral Based Biosafety Culture held at National Centre of Excellence in Molecular biology, University of the Punjab, Lahore on 23 August 2017.
- 2nd International symposium on Advances in Molecular Biology of Plant and health sciences held at Centre of Excellence in Molecular biology University of the Punjab from 21-23, Nov. 2017.
- Global Young Scientist summit 2018 held at Nanyang Technological University Singapore from 21-27 January 2018.
- International Conference on Recent innovations in Molecular Sciences, University of the Punjab Lahore, Pakistan from November 06-08, 2019.
- Participated in International conference Recent Innovations in Molecular Sciences held on November 6-8, 2019 by University of the Punjab Lahore.
- Participated in Seminar on Genomic Applications of PCR, qPCR and NGS held on 12th December, 2019 by Thermofisher Scientific at PC, Lahore.

- Participated in 8th Invention to Innovation Summit, April 02-03,2019 at University of the Punjab Lahore.
- Webinar on Wearable technologies in Respiratory functional assesment organized by European Respiratory Society, 25 February 2021.
- Webinar on Congenital Airways diseases organized by European Respiratory Society, 23 March 2021.
- Participated in ERS Satellite 2022 organized by European Respiratory Society on 24th February 2022.
- Participated in SEGEG scientific meeting held at university college London on 1st April 2022.
- Participated as poster presenter in WAO/BSACI conference held from 25-27th April 2022 in Edinburgh United Kingdom.
- Webinar on Respiratory sequelae of preterm birth across the life span organized by ERS on 29 November 2022.
- Participated in International conference on Plant Molecular Biology (ICPMB) Held in CEMB from 14-15December, 2022.
- Participated in Awareness seminar on GM Soybean and potential of soybean cultivation in Pakistan held at CEMB on 23rd January, 2023.
- Organized International conference on Trends and Challenges in Health Sciences from March 1-2, 2023 at Centre of Excellence in Molecular Biology, University of the Punjab Lahore.
- Successfully done Online hands-on course in Statistical data analysis and Machine learning from 8th July to 7th September 2024 held at COMSATS University Islamabad.