

## **Dr. Naila Malkani**

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### **Personal Statement**

Over the past thirteen years, my scientific career has been dedicated to advancing our knowledge of cancer progression and treatment. My main goal is to contribute to development of precision therapies and improve our understanding of cancer biology. I have been particularly fascinated by the intricate interactions between signaling networks in cancer, encompassing genetic and epigenetic drivers, and the diverse range of symptoms exhibited by this complex disease. Through my work in computational and translational research, I am determined to acquire a comprehensive and multi-layered understanding of cancer progression and its potential treatments.

### **Academic Record:**

<b>Certificate / Degree</b>	<b>Subjects</b>	<b>Board / University</b>	<b>Division/ CGPA</b>	<b>Remarks/ Distinction</b>
Matriculation 1995	Science	Federal Board of Intermediate and Secondary Education Islamabad, PAKISTAN	1 <sup>st</sup> division	
Intermediate 1998	Pre-Medical	Federal Board of Intermediate and Secondary Education Islamabad, PAKISTAN	1 <sup>st</sup> division	National Cadet Corps & Women Guard Certificate
Graduation BSc 2000	Zoology, Botany, Chemistry	University of Punjab, Lahore, PAKISTAN	1 <sup>st</sup> division	
Masters MSc 2002	Zoology	GC University, Lahore, PAKISTAN	3.93/4.00	Gold Medal & Academic Roll of Honour; Fauji Foundation Distinction Award
MPhil 2004	Zoology	GC University, Lahore, PAKISTAN	3.63/4.00	1 <sup>st</sup> Position
PhD 2014	Vascular Biology (equivalence to Biology by HEC)	Medical University of Vienna, AUSTRIA.	NA	HEC overseas scholarship for PhD abroad batch II
Fellowship Nov, 2020 to Jan 2021	Ernst Mach Follow Up Grant	Medical University of Vienna, AUSTRIA.	NA	Grant by the Government of AUSTRIA
Fellowship April – June, 2025	Yamagiwa-Yoshida Memorial International Cancer Study Grant	Kings College London, UK	NA	Union of International Cancer Control UICC (WHO) grant

### **Distinctions & Achievements:**

1. Gold medal for first class first position in M.Sc. Zoology 2002.
2. Academic Roll of Honor in 2002 from GC University, Lahore.
3. First class first position in M.Phil Zoology 2004.
4. 2<sup>nd</sup> prize in poster competition in 3<sup>rd</sup> Symposium of Pakistan Fisheries Societies held in GC University, Lahore, April 25-26<sup>th</sup>, 2005.
5. Silver medal in 100m race in annual sports 2001 of GC University, Lahore.

### **Awards and Scholarships:**

- i. **UICC Yamagiwa-Yoshida Memorial International Cancer Study Grant** for 03 months research fellowship by “Union of International Cancer Control, WHO” at King’s College, London, UK (01-4-2025 to 30-6-2025).
- ii. **Ernst Mach Follow Up Grant** for 03 months research fellowship by Government of Austria in Medical University of Vienna, Austria (01-11-2020 to 30-01-2021).
- iii. **Travel grant** to attend 4th Conference on Advances in Biochemistry and Molecular Biology (CABMB 2018), in Sanya, China by Higher Education Commission, Pakistan.
- iv. **Travel grant** to attend 5<sup>th</sup> international conference on agriculture and fisheries, 2017 in Colombo, Sri Lanka by Punjab Higher Education Commission.
- v. **PhD scholarship** for studying abroad by Higher Education Commission of Pakistan (Oct. 2009 to May 2014).
- vi. **Award** for getting training in museum curation from Natural History Museum, London by Higher Education Commission of Pakistan (July – August, 2005).

### **Service Record:**

1. Assistant Professor Zoology (BPS-19), 6<sup>th</sup> January, 2018 to date, Department of Zoology, GC University, Lahore.
2. Senior Museum Curator (BPS-18), 9<sup>th</sup> April, 2008 to 6<sup>th</sup> January, 2018, Department of Zoology, GC University, Lahore.
3. Assistant Museum Curator (BPS-17), 9<sup>th</sup> April, 2004 to 9<sup>th</sup> April, 2008, Department of Zoology, GC University, Lahore.

### **Job Responsibilities:**

1. Teaching of classes at post graduate, graduate and undergraduate level.
2. Research supervision of Ph.D, M.Phil and BS.(Hons.) students.
3. **OTHERS:**
  - i. **Advisor** “Disease Awareness and Prevention Society, GC University, Lahore”.
  - ii. **Member Board of studies**, Department of Zoology, GC University, Lahore 2023 to date.
  - iii. **Editor-in-chief “Healthnama”** magazine of Disease Awareness and Prevention Society, GC University, Lahore.
  - iv. **University link coordinator** with Veterinary Research institute, Lahore, 2017 to date.
  - v. **University link coordinator** with Pakistan Museum of Natural History, Islamabad, 2017 to date.
  - vi. **Member “Board of studies”** Department of Zoology, February, 2023 to date.
  - vii. **Member “Academic Committee”** Department of Zoology, June, 2023 to date
  - viii. **Secretary BS Zoology scheme of study** Department of Zoology, March, 2025 to date.
  - ix. Departmental **Sports Coordinator**, January, 2023 to date
  - x. Departmental **Prospectus Coordinator**, Feb, 2017 to date
  - xi. Departmental **QEC Focal Person**, Feb, 2019 to date

- xii. Departmental **Web Manager**, Feb, 2019 to date.
- xiii. **Incharge** “Cell and Tissue Culture Laboratory” Department of Zoology, GC University, Lahore, 2014 to date.
- xiv. Departmental **Plagiarism Coordinator**, Feb, 2018 to Feb, 2019; August, 2022 to date
- xv. Departmental **External Links Coordinator**, Feb, 2017 to Feb, 2018
- xvi. Departmental **Controller of Examinations** 2014 to 2017, Department of Zoology, GC University, Lahore.
- xvii. **Sub-Editor** of research journal Biologia (Pakistan), July, 2014 to 2017.
- xviii. Departmental **QEC Team Member**, 2006 to Feb, 2018.

**Courses Designed:**

1. Animal cell and Tissue Culture Z-7105	(3 Credit hr) M.phil
2. Cell Signaling Z-8120	(3 Credit hr) PhD
3. Principles of Epidemiology Z-	(3 Credit hr) PhD

**Book/Chapter:**

- 1. Regulation of angiogenesis in tumor metastasis via Ets- related ERG and micro RNAs; one hand washes other IN “Unraveling the Complexities of Metastasis” (2022). (ISBN: 9780128217894).
- 2. Tumor Microenvironment Modulation and Its Impact on Immunotherapy in Triple-Negative Breast Cancer. In: Interdisciplinary Cancer Research (2024). Springer, Cham. [https://doi.org/10.1007/16833\\_2024\\_280](https://doi.org/10.1007/16833_2024_280).

**Peer Reviewed Publications:**

- 1. Mubeen, I., Shabbir, A., Awad, E.M., Naeemi, H., Asenbauer, T. B., Rashid M. U. & **Malkani, N.** Association of PD-1 immune checkpoint polymorphisms with oral cancer risk: results from a Pakistani case-control study. *Mol Biol Rep* 52, 917 (2025). <https://doi.org/10.1007/s11033-025-10968-4>
- 2. Shabir A, Kazmi S, Rashid MU, Mubeen I, Jamshed A, Hussain SR, **Malkani N.** Unveiling Oral Cancer Epidemiology in Pakistan: Insights From a Case-Control Study. *Glob Health Epidemiol Genom.* 2025 Jun 5;2025:9982580. doi: 10.1155/ghe3/9982580. PMID: 40519788; PMCID: PMC12163221.
- 3. Bashir, MUN, Rashid, MU, **Malkani, N.** (2025). Unveiling 2-Isopropyl-5-methylphenol's Immunomodulatory Potential in Breast Cancer: A Synergistic Computational and Laboratory Investigation. *Journal of Steroid Biochemistry and Molecular Biology*, :106702. doi: 10.1016/j.jsbmb.2025.106702
- 4. Ramzan, A., Rashid, M. U., & **Malkani, N.** (2025). Unlocking the role of miR-17: Driving G1-S cell cycle transition in oral tongue cancer through integrated bioinformatics and laboratory analyses. *Archives of Oral Biology*, 171, 106160. [doi: 10.1016/j.archoralbio.2024.106160](https://doi.org/10.1016/j.archoralbio.2024.106160)
- 5. Khalid K, Bashir MUN, Usman Rashid M, **Malkani N.** (2024). Nature's arsenal unleashed: Senegalia modesta derived thymol halts cancer progression by suppressing proangiogenic genes. *Nature Product Research.* doi: 10.1080/14786419.2024.2446708.
- 6. Shabbir, A., Rashid, M. U., Awad, E. M., Naeemi, H., Asenbauer, T. B., & **Malkani, N.** (2024). Association between the variations in metabolic pathways and oral cancer risk: Results from a Pakistani case-control study. *Molecular Biology Reports.* <https://doi.org/10.1007/s11033-024-10100-y>
- 7. Wazir, G., Wajid, A., Wahid, A., Batool, A., Parveen, A., Maqsood, Q., Zahid, A., Aslam, S., & **Malkani, N.** (2024). Genomic association of SNPs rs4077582 of CYP11A1 and rs700519 of CYP19A1 genes with polycystic ovarian syndrome. *Endocrine*, 1-7.

8. Khan, R. U., Mumtaz, S., Sohail, M. I., & **Malkani, N.** (2024). Assessing regulation of ERG and its target proteins by ERG isoform 8. *Iranian Journal of Science*. <https://doi.org/10.1007/s40995-024-01683-z>
9. Amin, I., Jahan, N., **Malkani, N.**, Amin, S., & Nadeem, S. I. (2023). Inhibitory activities of methanolic extracts of *Carica papaya*, *Mentha piperita*, and *Citrullus colocynthis* against dengue viruses-2 viability. *Lahore Garrison University Journal of Life Sciences*, 7(4), 515-529. <https://doi.org/10.54692/lgujls.2023.0704313>
10. Ramzan, A., Yousaf, M. A., Rashid, M. U., Basheera, S., & **Malkani, N.** (2023). In-silico prediction of TGF- $\beta$ 1 non-synonymous variants and their impact on binding affinity to Fresolimumab. *Journal of Biomolecular Structure and Dynamics*. <https://doi.org/10.1080/07391102.2023.2268198>
11. Mumtaz, S., Usman Rashid, M., Khan, R. U., & **Malkani, N.** (2023). miR-4482 and miR-3912 aim for 3'UTR of ERG mRNA in prostate cancer. *PLoS ONE*, 18(6), e0286996. <https://doi.org/10.1371/journal.pone.0286996>
12. **Malkani, N.**, & Rashid, M. U. (2023). Systemic diseases and gastrointestinal cancer risk. *Journal of Cancer & Allied Specialties*, 9(2), 1–12. <https://doi.org/10.37029/jcas.v9i2.473>
13. Yaqub, A., Rashid, M., Ditta, S. A., **Malkani, N.**, Ali, N. M., Yousaf, M. Z., Haider, A., Yousaf, M. J., & Abdullah, S. (2023). In vivo antioxidant potential of biogenic silver nanoparticles synthesized from *Psidium guajava* L. *Nano Biomedicine and Engineering*, 15(3), 225–238. <https://doi.org/10.26599/NBE.2023.9290026>
14. Bilal, S., Khan, R. U., & **Malkani, N.** (2023). Association of obesity with the occurrence of gastrointestinal cancer: A meta-analysis. *Lahore Garrison University Journal of Life Sciences*, 7(1), 200–215. <https://doi.org/10.54692/lgujls.2023.0701237>
15. Ramzan, S., Shujah, S., Holt, K. B., Rehman, Z., Hussain, S. T., Cockcroft, J. K., **Malkani, N.**, Muhammad, N., & Kauser, A. (2023). Structural characterization, DNA binding study, antioxidant potential and antitumor activity of diorganotin(IV) complexes against human breast cancer cell line MDA-MB-231. *Journal of Organometallic Chemistry*, 990, 122671. <https://doi.org/10.1016/j.jorgchem.2023.122671>
16. **Malkani, N.**, Khalid, S., Ashraf, S., Kamran, M., Khan, R. U., & Yaqub, A. (2022). Molecular identification of museum-preserved type specimens of fish species using DNA barcoding. *Lahore Garrison University Journal of Life Sciences*, 6(3), 200–215. <https://doi.org/10.54692/lgujls.2022.0603223>
17. Sohail, M. I., **Malkani, N.**, Tahir, N., Khalil, A., Attar, R., & Mumtaz, S. (2022). Silymarin protects the liver from  $\alpha$ -naphthylisothiocyanate-induced cholestasis by modulating the expression of genes involved in bile acid homeostasis: Anti-cholestatic effect of silymarin. *Cellular and Molecular Biology*, 68(7), 208–212. <https://doi.org/10.14715/cmb/2022.68.7.34>
18. Mumtaz, S., Arshad, S., Khan, R. U., Rashid, M. U., & **Malkani, N.** (2022). The significance of Erythroblast Transformation Specific (ETS) transcription factors in breast cancer progression: A meta-analysis. *Pakistan Journal of Zoology*, Advance Online Publication. <https://doi.org/10.17582/journal.pjz/20220119060146>
19. **Malkani, N.**, Sohail, M. I., Ijaz, F., Naeem, A., Mumtaz, S., & Saeed, Z. (2022). *Berberis aristata* reduces vancomycin-induced nephrotoxicity by down-regulation of cell proliferation markers. *Journal of Herbal Medicine*, 31, 100540. <https://doi.org/10.1016/j.hermed.2022.100540>
20. Khan, R. U., Mumtaz, S., Rashid, M. U., & **Malkani, N.** (2021). An outlook on the COVID-19 infection magnitude in Pakistan and potential factors contributing to low mortality rates. *Annals of King Edward Medical University*, 27(4), 586–594.
21. Mehmood, A., Khan, Z., & **Malkani, N.** (2021). A rampant increase in oral cancer trends in Pakistan during the period 2010 to 2016. *Biologia (Pakistan)*, 67(2), 102–107.

22. **Malkani, N.**, Kazmi, S., & Rashid, M. U. (2021). Epidemiological assessment of oral cancer burden in Pakistan. *Cancer Investigation*, 39(10), 842–853. <https://doi.org/10.1080/07357907.2021.1982962>.

23. Arshad, S., Ishaque, I., Mumtaz, S., Rashid, M.U., & **Malkani N.** (2021). In-silico analyses of nonsynonymous variants in the BRCA1 gene. *Biochemical Genetics*, 59(6), 1506-1526. DOI:10.1007/s10528-021-10074-7.

24. Rashid, M.U., & **Malkani N.** (2021). SARS-COV-2 infection and lung tumor microenvironment. *Molecular Biology Reports*, 48; 1925-1934. DOI:10.1007/s11033-021-06149-8.

25. Rashid, M. U., Muhammad, N., Khan, F. A., Shehzad, U., Naeemi, H., **Malkani, N.**, & Hamann, U. (2020). Prevalence of RECQL germline variants in Pakistani early-onset and familial breast cancer patients. *Hereditary cancer in clinical practice*, 18, 1-9.

26. Kamran, M., Yaqub, A., **Malkani, N.**, Anjum, K. M., Awan, M. N., & Paknejad, H. (2020). Identification and phylogenetic analysis of Channa species from riverine system of Pakistan using COI gene as a DNA barcoding marker. *Journal of Bioresource Management*, 7(2), 10.

27. **Malkani, N.**, Naeem, A., Ijaz, F., Mumtaz, S., Ashraf, S., & Sohail, M. I. (2020). Silybum marianum (milk thistle) improves vancomycin induced nephrotoxicity by downregulating apoptosis. *Molecular Biology Reports*, 47, 5451-5459.

28. Hafeez, S., Mahmood, A., Khan, R. U., & **Malkani, N.** (2020). Trends in Cancer Prevalence in Punjab, Pakistan: a systematic study from 2010 to 2016. *Journal of Bioresource Management*, 7(2), 8.

29. Parveen, A., Batool, A., Mukhtar, M., Wajid, A., & **Malkani, N.** (2020). Association of Interleukin 17F with Arthritis in Punjabi Families of Pakistan. *Journal of Bioresource Management*, 7(1), 4.

30. Yaqub, A., **Malkani, N.**, Shabbir, A., Ditta, S. A., Tanvir, F., Ali, S., ... & Ullah, R. (2020). Novel biosynthesis of copper nanoparticles using Zingiber and Allium sp. with synergic effect of doxycycline for anticancer and bactericidal activity. *Current Microbiology*, 77, 2287-2299.

31. Yaqub, A., Anjum, K. M., Ditta, S. A., Tanvir, F., & **Malkani, N.** (2019). Post-exposure histopathological studies of albino mice liver to silver nanoparticles prepared from (*Ocimum tenuiflorum*) green synthesis method. *JAPS: Journal of Animal & Plant Sciences*, 29(6).

32. **Malkani, N.**, Farheen, M., Hamid, H., Batool, A., Khan, R. U., & Yaqub, A. (2019). Matrix metalloprotease-9 polymorphism and its association with Atherosclerosis—A case-control study in Pakistani population. *Journal of Pakistan Medical Association*, 69(1416), 1416-20. DOI : 10.5455/JPMA.300814.

33. **Malkani, N.**, Hamid, H., Farheen, M., Batool, A., & Yaqub, A. (2019). Association of matrix metalloproteinase 2 (MMP2) with atherosclerosis among population of Lahore Pakistan. *Pakistan Heart Journal*, 52(1).

34. Yaqub, A., Ditta, S. A., Anjum, K. M., Tanvir, F., **Malkani, N.**, & Yousaf, M. Z. (2019). Comparative analysis of toxicity induced by different synthetic silver nanoparticles in albino mice. *BioNanoScience*, 9, 553-563.

35. Aslam, Z., Mumtaz, M., & **Malkani, N.** (2019). Evaluation of serum circulating levels of ICAM-1 as tuberculosis risk-assessment factor in type 2 diabetes patients. *Puerto Rico Health Sciences Journal*, 38(1), 22-26.

36. Yaqub, A., Kamran, M., **Malkani, N.**, Anjum, K. M., Faheem, M., Iqbal, M., & Khan, R. U. (2019). Mitochondrial COI gene based molecular identification and phylogenetic analysis in exotic fish (*Oreochromis mossambicus*) of Pakistan. *JAPS: Journal of Animal & Plant Sciences*, 29(5).

37. **Malkani, N.**, Ishaque, I., Shahbaz, K., Khan, R. U., Shabbir, A., & Yaqub, A. (2018). Health comparison of farm-raised and wild-caught Labeo rohita (Cypriniformes: Cyprinidae). *Biologia (Pakistan)*, 64(2); 297-301.
38. Yaqub, A., Anjum, M. K., Bari, S., Ayub, M., Kamran, M., & **Malkani, N.** (2018). Evaluation of Cd (II) and Cr (VI) accumulation in Thaila fish Gibelion catla (formerly Catla catla) collected from industrially polluted water. *Pak J Zool*, 33, 88-93.
39. **Malkani, N.**, Mumtaz, M., Aslam, Z., & Yaqub, A. (2018). Plasma levels of anti-inflammatory cytokine Interleukin-10 predict tuberculosis risk in type 2 Diabetes Mellitus. *Sindh University Research Journal-SURJ (Science Series)*, 50(2), 259-264.
40. Khalid, S., & **Malkani, N.** (2016). Isolation and cloning of human progesterone receptor isoform-b in CMV-eGFP vector. *Biologia (Pakistan)*, 62(1); 19-28.
41. Hoesel, B., **Malkani, N.**, Hochreiter, B., Basílio, J., Sughra, K., Ilyas, M., & Schmid, J. A. (2016). Sequence-function correlations and dynamics of ERG isoforms. ERG8 is the black sheep of the family. *Biochimica et Biophysica Acta (BBA)-Molecular Cell Research*, 1863(2), 205-218. DOI: 10.1016/j.bbamcr.2015.10.023.
42. Kunze, M., **Malkani, N.**, Maurer-Stroh, S., Wiesinger, C., Schmid, J. A., & Berger, J. (2015). Mechanistic insights into PTS2-mediated peroxisomal protein import: the co-receptor PEX5L drastically increases the interaction strength between the cargo protein and the receptor PEX7. *Journal of Biological Chemistry*, 290(8), 4928-4940. DOI: 10.1074/jbc.M114.601575.
43. **Malkani, N.**, & Schmid, J. A. (2011). Some secrets of fluorescent proteins: distinct bleaching in various mounting fluids and photoactivation of cyan fluorescent proteins at YFP-excitation. *PloS one*, 6(4), e18586. DOI: 10.1371/journal.pone.0018586.
44. **Malkani, N.**, & Mughal, M. S. (2006). Humoral antibody response following chromium exposure in fresh water teleost. *Biologia (Pakistan)*, 52(2); 117-120.
45. **Malkani, N.**, Mughal, M. S., & Jahan, N. (2005). Bioaccumulation of chromium in various tissues of *Labeo rohita*. *Sindh University Research Journal*, 38(1); 39-44.
46. Mughal, M.S., & **Malkani, N.** (2005). Toxic effects of chromium on leucocytes of *Labeo rohita* after administration of human B erythrocytes as antigen. *Sindh University Research Journal*, 38(2); 47-56.
47. Mughal, M.S., & **Malkani, N.** (2005). Effect of cadmium intoxication on leucocytes of *Labeo rohita*. *Biologia (Pakistan)*, 51(1); 15-21.
48. Mughal, M.S., **Malkani, N.**, & Jahan, N. (2005). Histopathological changes in kidney and muscle of *Labeo rohita* due to cadmium intoxication. *Biologia (Pakistan)*, 50(1); 39-45.

### **Research Collaborations:**

- i. King's College London, UK; with Prof. Dr. Rebecca Oakey at Department of Medical and Molecular Genetics for research and technology transfer.
- ii. Medical University of Vienna, Austria (MUW); with Prof. Dr. Johannes Schmid at Department of vascular Biology and thrombosis Research for laboratory facilities and student exchange.
- iii. Medical University of Vienna, Austria (MUW); with Prof. Dr. Talin Barisani-Asenbauer at Center for Pathophysiology, Infectiology & Immunology for laboratory facilities and student exchange.
- iv. Shaukat Khanum Memorial Cancer Hospital and Research Center (SKMCH&RC); with Dr. Muhammad Usman Rashid at Basic Sciences Department for cancer sample acquisition, student training and PhD co-supervision.
- v. National Agriculture Research Center (NARC) Islamabad; with Dr. Athar Abbas at Animal Sciences institute for laboratory facilities and student Exchange.
- vi. University of Veterinary and Animal Sciences (UVAS); with Prof. Dr. Hafsa Zaneb Department of Anatomy and Histology for laboratory facilities and student training.
- vii. Veterinary Research Institute Lahore (VRI); for cell culture facilities and student training.

**Projects:**

	Project Title	Donor Agency	Amount (Rs/\$)	Duration		Role
				From	To	
<b>COMPLETED</b>						
<b>1</b>	Association of genetic variants involved in Inflammatory Pathways and risk of oral cancer development. a Pakistani case-control study	ORIC, GC University, Lahore, Pakistan	Rs. <b>500000</b>	2019	2021	PI
<b>2</b>	Renovation and development of Stephenson Natural History Museum, Department of Zoology, GC University, Lahore.	ORIC, GC University, Lahore, Pakistan	Rs. <b>300000</b>	2018	2020	Co-PI
<b>3</b>	Cooperativity of NF-κB (p65) mediated inflammation with p21 in breast cancer patients	ORIC, GC University, Lahore, Pakistan	Rs. <b>300000</b>	Jan. 2015	Dec. 2015	PI
<b>4</b>	CDK-interacting protein 1 inflammation in Breast Cancer	Cancer Care Hospital and Research Institute	Rs. <b>50000</b>	Sep. 2014	Feb. 2015	PI
<b>ONGOING</b>						
<b>5</b>	Anti-angiogenic potential of <i>Senegalia modesta</i> extract in metastatic cancer	ORIC, GC University, Lahore, Pakistan	Rs. <b>300000</b>	March, 2023		PI
<b>6</b>	Contribution of constitutional BRCA1 promoter methylation to triple-negative breast cancer patients from Pakistan	HealthRAB	Rs. <b>1000000</b>	May 2024	May 2025	Co-PI

**Expertise in Research Techniques:**

- i. Molecular Biology techniques (Molecular cloning, microarrays, qPCR, Western/Northern blotting, ABCD assay etc.).
- ii. Animal Cell and tissue Culture.
- iii. NGS data analysis
- iv. RNA seq analysis
- v. DNA methylation
- vi. DNA Sequencing
- vii. Microscopy techniques (FRET, FRAP, FLIP, IHC, IF)
- viii. CRISPR-Cas9 gene editing
- ix. High resolution melting curve analysis (HRM)
- x. Mouse handling and techniques
- xi. Gene Spring analysis.
- xii. Basic computer skills.

## **Professional Training:**

<b>INTERNATIONAL</b>		
Workshop in bioinformatics data analysis 2 June, 2025	HAB Workshop: Nextflow In Action - Design and implement your own bioinformatics workflow	King's College London, UK
King's College London Innovation Scholars Programme 24 April, 2025	NGS: Introduction and Pre-processing Pipeline	King's College London, UK
Online Training course in Good Clinical Practice June, 2023	Ethical practices in clinical research	National Institute on Drug Abuse, National Institutes of Health, Department of Health and Human Services, USA under Contract No. HHSN27201201000024C.
Introduction to Systematic Review and Meta-Analysis- Virtual training 15 May, 2023	Systematic Review and Meta-Analysis	John Hopkins University, USA
Virtual training in Study Designs in Epidemiology 10 May, 2023	Epidemiology Studies	Imperial College London, UK
Virtual program in Health Research methodology and Publishing 27 April, 2023	Research to Publication	BMJ and University of California, San Francisco
Non-Communicable Diseases in Humanitarian Settings- Virtual course 8 April, 2023	Non-communicable Diseases	University of Copenhagen, Denmark
Publishing a Manuscript Workshop 3-6 Nov., 2022	Academic Publication	The American Association of Continuing Medical Education, USA
Certificate of Training 1 Nov., 2020 – 31 Jan., 2021	CRISPR-Cas9 gene editing	Medical University of Vienna, Austria.
International Workshop Certificate 20 Dec., 2017	DNA Barcoding (Barcode of life data systems)	GC University, Lahore
International Workshop Certificate 31 Jul., 2017	Application of Computational biology in Biotechnology	National Institute for Biotechnology and Genetic Engineering, Faisalabad, Pakistan
Summer School Certificate 29 Nov. – 2 Oct., 2011	Inflammation and Cardiovascular Disease	European Atherosclerosis Society, Obergurgl, Austria
Course Training Sep., 2011	Expression analysis with Gene-Spring	Medical University of Vienna, Austria.
A1 Phase 1(A1/1) 19 Jan. – 18 Mar., 2010	German language course	University of Vienna, Austria
Training Course 14 Aug. – 22 Sep., 2005	Natural History Museum Curation	Natural History Museum, London, UK.
<b>NATIONAL</b>		
Certificate of Workshop	Workshop on	Health Security Partners, USA. and

27-28 Nov., 2024	Biosecurity and Dual Use Research of Concern	Department of Microbiology, GC University, Lahore, Pakistan
Certificate of virtual training 28 Oct., 2022	Molecular Research Methodologies and Breast Cancer Awareness	Department of Biotechnology, The Balochistan University of Information Technology, Engineering, and Management Sciences (BUITEMS), Quetta, Pakistan
Certificate for Training 21 Oct., 2022	“Khud ko Pehchano” Initiative	Punjab Population Innovation Fund in collaboration with GC University, Lahore.
Certificate for Training 20 – 24 Jan., 2022	Higher Resolution Melting Curve Analysis	Department of Basic Sciences, Shaukat Khanum Memorial Cancer Hospital and Research Center, Lahore, Pakistan
Certificate of Attendance 12 Dec., 2019	Genomic Applications of PCR, qPCR and NGS	H.A. Shah & Sons & Thermo-fisher Scientific
Workshop Certificate 7 – 8 March, 2019	Basic tools in bioinformatics: molecular modeling	GC University, Lahore, Pakistan
Workshop Certificate 09-10 October 2017	Intellectual Property Protection for the Inventions Related to Agriculture and Animal Sciences	University of Veterinary and Animal Sciences, Lahore, Pakistan
Training Course 18 - 22 June, 2007	Intel Teaching Training Course	Intel Corporation and GC University, Lahore, Pakistan
Certificate for Training 13 - 22 December, 2006	Biotechnology and Molecular biology techniques	University of Arid Agriculture, Rawalpindi, Pakistan

### **Theses:**

**PhD Thesis:** Investigation of the transcription factor ERG and its isoforms.

**M.Phil Thesis:** Immunomodulation due to acute chromium poisoning in *Labeo rohita*.

**M.Sc Thesis:** Effect of cadmium exposure on some hematological and serological parameters with a histopathological study of kidney and muscle in *Labeo rohita*.

### **Research Supervised:**

#### **Ph.D**

Sr. No.	Name of the Student	Thesis Title	Status
1.	Sidra Mumtaz	Regulation of <i>Ets</i> -related gene (ERG) to control angiogenesis	Completed August, 2023
2.	Rizwan Ullah Khan	Structural and functional aspects of <i>Ets</i> - related gene (ERG) isoforms.	At thesis write up stage
3.	Iqra Mubeen	Association of genetic variants in immune checkpoints with development of oral cancer in Pakistan.	On-going
4.	Arifa Khan	Association of genetic variants in metabolic pathways with development of oral cancer in Pakistan.	Completed March, 2025

5.	Bushra Nageen	Therapeutic Potential of Active Components of <i>Olea ferruginea</i> and <i>Dodonea viscosa</i> against Breast Cancer	On-going
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### **M.Phil.**

Sr. No.	Name of the Student	Thesis Title	Completion Date
1.	Maryam Mumtaz	Prediction of increased tuberculosis risk in type 2 diabetes based on levels of anti-inflammatory cytokine IL-10.	29-10-2015
2.	Ghazanfar Abbas	Cooperativity of NF- $\kappa$ B (p65) mediated Inflammation with p21 in breast cancer patients.	30-10-2015
3.	Zainab Aslam	Evaluation of sICAM-1 as Tuberculosis Risk Factor in Type2 Diabetic Patients.	29-10-2015
4.	Hira Hamid	Polymorphism and Genotype Association of <i>MMP2</i> gene with Atherosclerosis.	24-10-2016
5.	Aqsa Sadiq	Expression analysis of transcription factor <i>ERG</i> in Breast Cancer.	24-10-2016
6.	Mehwish Farheen	Polymorphism and genotype association of <i>MMP9</i> gene with atherosclerosis.	24-10-2016
7.	Zaeema Khan	Targeting 3'UTR of <i>ERG</i> via miR-361 to halt Endothelial cells Proliferation.	29-9-2017
8.	Ammara Naeem	Treatment potential of <i>Silybum marianum</i> (milk thistle) against vancomycin induced nephrotoxicity.	29-10-2018
9.	Farah Ijaz	Treatment potential of <i>Berberis aristata</i> (Indian black berry) against vancomycin induced toxicity.	31-10-2018
10.	Sana Hafeez	Prevalence of major cancer types (cervical, breast, colon, prostate, oral) in Punjab, Pakistan.	29-10-2018
11.	Muhammad Imran	A modified method for the production of <i>Taq</i> DNA polymerase.	07-10-2019
12.	Iqra Mubeen	Association of MMP 9 with the onset of type 2 diabetes mellitus.	07-10-2019
13.	Sidra Arshad	Functional consequences of BRCT domain mutation in Breast cancer susceptibility 1 gene.	27-12-2020
14.	Irfan Ishaque	Functional consequences of RING finger domain mutation in Breast cancer susceptibility 1 gene.	27-12-2020
15.	Qurat-ul-ain	Identification of miRNAs regulated gene expression in Breast cancer.	30-12-2021
16.	Sidra Tufail	Identification of miRNAs regulated gene expression in Liver cancer.	30-12-2021
17.	Sunira Asif	Analysis of miRNAs in development of breast cancer	22-12-2022
18.	Muntaha Zarmeen	Analysis of miRNA in development of Prostate cancer	22-12-2022
19.	Aiman Amjad	Analysis of angiogenesis related miRNA and liver cancer	22-12-2022
20.	Ammara Ramzan	miRNA-17 based regulation of Cyclin-dependent kinase inhibitor in cell cycle of oral cancer patient	18-09-2023
21.	Komal Khalid	Anti-angiogenic potential of <i>Senegalia modesta</i> extract in metastatic cancer	18-09-2023
22.	Iqra Bashir	Cytotoxic Potential of <i>Senegalia modesta</i> Extract	18-09-2023
23.	Sidra	Evaluation of Shiga toxin genes in <i>E-coli</i> from poultry	18-09-2023
24.	Iman Fatima	DNA methylation profile of <i>Tp53</i> in oral cancer	21-10-2024

25.	Muhammad Usama Munir	DNA methylation profile of <i>p21</i> in oral cancer	21-10-2024
26.	Mehr Un Nissa	Immunomodulatory potential of <i>Senegalia modesta</i> extract on breast cancer	21-10-2024
27.	Muhammad Rahim	Molecular docking analysis of thymol with Caspase-9	21-10-2024

**B.Sc.(Hons.):**

Sr. No.	Name of the Student	Thesis Title	Completion Date
1.	Rida Noor	Isolation and molecular cloning of Human Progesterone Receptor Isoform-A in GFP-CMV vector.	13-7-2015
2.	Saqiba Khalid	Isolation and molecular cloning of Human Progesterone Receptor Isoform-B in GFP-CMV vector.	13-7-2015
3.	Arifa Shabbir	Separation of CD54 (Ve-Cadherin) from human genome and its cloning in GFP expression vector.	13-7-2015
4.	Muhammad Adeel	Human <i>p21</i> isolation, cloning and expression analysis in CMV-eGFP vector.	26-7-2016
5.	Amna Iftikhar	Isolation and cloning of human Matrix Metalloproteinase2 ( <i>MMP-2</i> ) gene in Mammalian expression vector.	27-7-2016
6.	Beenish Sohail	Cloning of human Matrix Metalloproteinase 9 ( <i>MMP-9</i> ) gene in eGFP expression vector.	26-7-2016
7.	Sania Ashraf	Molecular identification of the type specimens of fishes preserved at Stephenson's Natural History Museum GC University, Lahore.	13-7-2017
8.	Shamaila Bashir	Cloning of human <i>ERG8</i> in bacterial expression vector for production of soluble mammalian proteins.	13-7-2017
9.	Memoona Arshad	<i>ERG</i> Isoform 3 cloning in bacterial expression vector for production of soluble mammalian protein.	13-7-2017
10.	Komal Naseem	NF-KB ( <i>p65</i> ) protein expression analysis in breast cancer.	13-7-2017
11.	Sabella Ishaq	<i>p21</i> protein expression analysis in breast cancer.	13-7-2017
12.	Sidra Arshad	A systemic review of Ets transcription factor family in breast cancer based on metaanalysis.	25-6-2018
13.	Sana Fatima	Stable vesicle production from bacterial total lipid extracts.	25-6-2018
14.	Husna Jurrat	Expression analysis of Matrix metalloproteinase 9 in atherosclerosis.	28-6-2018
15.	Asmat Mehmood	Investigation of oropharyngeal cancer status in Punjab.	25-6-2018
16.	Irfan ishque	Comparative studies on liver of farmed and wild <i>Labeo rohita</i>	28-6-2018
17.	Abdul Hannan	Serum Matrix metalloproteinase 2 evaluation of atherosclerotic patients.	25-5-2018
18.	Eisha tir razia Hussain	Berberine chloride ameliorates oxidative stress, inflammation and apoptosis in the pancreas of streptozotocin induced diabetic mice.	01-7-2019
19.	Rida Tariq	Berberine chloride ameliorates oxidative stress, inflammation and apoptosis in the liver of streptozotocin induced diabetic mice.	01-7-2019

20.	Ayesha Mahmood	Association of polymorphism in matrix metalloproteinase 9 gene in families with type 2 diabetes.	2020
21.	Samia Zahoor	Identification of polymorphism in matrix metalloproteinase 9 gene in families with type 2 diabetes	2020
22.	Nimra Asghar	Investigating genetic diversity in prostate cancer.	29-7-2021
23.	Ammara Ramzan	Bioinformatics analysis of differentially expressed genes and miRNA in oral cancer.	30-7-2021
24.	Sarmad Bilal	Meta-analysis on relation of obesity with occurrence of cancer.	30-7-2021
25.	Santosh Kumar	Protein-protein interactions of ERG in prostate cancer.	27-7-2022
26.	Saira Khalid	Association of ERG and miRNA expression in prostate cancer.	19-7-2022
27.	Amna	Genetic Polymorphism in <i>CTLA4</i> gene and it's correlation with oral cancer	7- 2023
28.	Kezia	Genetic Polymorphism in <i>CYP1A1</i> gene and it's correlation with oral cancer	7-2023
29.	Fatima Noor-ul-Ain Afreen	Phytochemistry and pharmacological potential of genus Cinnamomum	7-2023
30.	Maryum Nadeem	Phytochemistry and pharmacological potential of genus Acacia	7-2023
31.	Irum Saddique	Screening of potential genetic biomarkers in oral squamous tongue carcinoma	29-7-2024
32.	Mishal Farooq	Screening of potential epigenetic biomarkers in breast cancer	29-7-2024
33.	Maham Zulfiqar	Evaluation of apoptotic marker in <i>Senegalia modesta</i> treated breast cancer cells	29-7-2024

#### **TEACHING EXPERIENCE:**

Teaching at different levels in GC University, Lahore since 2004.

Teaching advanced specialized courses to Ph.D. students such as **Cell Signaling, Bioinformatics, Research Methods in Zoology, Clinical Hematology, and Cellular Immunology.**

To M.Phil students, I offer courses such as **Cancer Biology, Animal Cell and Tissue Culture, and Biodiversity and Phylogenetic Relationships.**

I have taught a diverse range of subjects to undergraduates also, including **Biological Techniques, Animal Handling, Biosafety and Security, Animal Form and Function, Animal Diversity, Cell Biology, Microbial Taxonomy, Virology and Mycology, Bacterial Morphology and Physiology, and Chordate Zoology.**

**Academic Talks / Seminars:**

<b>Sr. No.</b>	<b>Title of the Talk</b>	<b>Host Organization</b>	<b>Date</b>
1.	Unlocking the role of miR-17: Driving G1-S cell cycle transition in oral tongue cancer through integrated bioinformatics and laboratory analyses	Pakistan Institute of Medical Sciences, Islamabad (Cancercon2025)	4-6 February, 2025
2.	Nature's Arsenal Unleashed: <i>Senegalia modesta</i> derived thymol halts cancer progression by suppressing proangiogenic genes	Lahore Garrison University, Lahore	21-22 January, 2025
3.	miR-4482 and miR-3912 aim for 3'UTR of ERG mRNA in Prostate cancer in 43 Annual International Scientific Conference, KEMUCON	King Edward Medical University, Lahore, Pakistan	15-19 December, 2023
4.	Modulation of angiogenesis in cancer via micro RNA-3912 in “Current Innovative trends in applied Biosciences-CITABS”	Lahore Garrison University, Lahore	21-22 November, 2022
5.	Breast Cancer Awareness sessions in rural areas.	Government Chandu Begum Associate College for Women Kanganpur (District Kasur)	8 November, 2022
6.	DNA isolation techniques in “Two-days workshop on DNA isolation and PCR”	GC University, Lahore.	16-17 June, 2022
7.	Breast cancer Awareness Seminar	Pak-Turk Maarif International Schools & Colleges Lahore	07 Nov., 2020
8.	“Taxidermy” in One month training workshop on fauna study; 24 – 30 Aug., 2021	GC University, Lahore, Pakistan	25 Aug., 2021
9.	“Breast cancer progression and differential expression of p21 isoforms” in 4th Conference on Advances in Biochemistry and Molecular Biology (CABMB 2018), Sanya, China	Academic Communications, China	03 Dec., 2018
10.	“Molecular identification of type specimens of <i>Naziritor zhobensis</i> and <i>Schizothorax skarduensis</i> collected from Pakistan” in Fifth International Conference on Agriculture & Fisheries, Systems & Technology 2017, Columbo, SriLanka.	International Center for Research & Development (ICRD), Columbo, SriLanka	08 Dec., 2017
11.	“Documentation and cataloguing in Museums” in Five-days in-service teachers training course in Museum Curation and Management; 09 – 13 Jan., 2007.	GC University Lahore and HEC, Pakistan	09 Jan., 2007

**Conference Chair/Co-Chair:**

- Chaired** session in “Recent advances in Biological Sciences (RABS)” at Lahore Garrison University, Lahore, on 21<sup>st</sup>-22<sup>nd</sup> January, 2025.

- ii. **Chaired** “Basic Research in Cancer session” in “23<sup>rd</sup> Shaukat Khanum Cancer Symposium, 2024” at Pearl Continental Hotel, Lahore on 4<sup>th</sup> – 6<sup>th</sup> November, 2024.
- iii. **Chaired** session in “National conference on frontiers in applied biological Sciences” at Lahore Garrison University, Lahore, on 13<sup>th</sup>-14<sup>th</sup> December, 2023.
- iv. **Chaired** “Basic Research in Cancer session” in “21<sup>st</sup> Shaukat Khanum Cancer Symposium, 2022” at Pearl Continental Hotel, Lahore on 4<sup>th</sup> – 6<sup>th</sup> November, 2022.
- v. **Co-chaired** “Epidemiology and Public Health” session in 4<sup>th</sup> International Conference on “Innovative Biological and Public Health Research” at GC University, Lahore on 7<sup>th</sup> – 8<sup>th</sup> December, 2021.
- vi. **Co-chaired** “Molecular biology and Genetics” session in 3<sup>rd</sup> International Conference on “Innovative Biological and Public Health Research” at GC University, Lahore on 13<sup>th</sup> – 14<sup>th</sup> November, 2019.
- vii. **Chaired** “Basic Research in Cancer session” in “18<sup>th</sup> Shaukat Khanum Cancer Symposium, 2019” at Pearl Continental Hotel, Lahore on 1<sup>st</sup> – 3<sup>rd</sup> November, 2019.
- viii. **Chaired** “Basic Research in Cancer session” in “17<sup>th</sup> Shaukat Khanum Cancer Symposium, 2018” at Pearl Continental Hotel, Lahore on 2<sup>nd</sup> – 4<sup>th</sup> November, 2018.

### **Conference Participated/Organized:**

- i- Participate in Queen Marry University, London, Centre for Epigenetics Launch Conference on 4 June, 2025.
- ii- Participated in “Recent advances in Biological Sciences (RABS)” at Lahore Garrison University, Lahore, on 21<sup>st</sup>-22<sup>nd</sup> January, 2025.
- iii- Organized as member of Abstract committee in “Innovative Biological and Public Health Research” at GC University, Lahore on 10<sup>th</sup> – 11<sup>th</sup> October, 2023.
- iv- Organized as member of Abstract committee in “International conference on fisheries and aquaculture” at GC University, Lahore on 23-24 November, 2022.
- v- Participated in “Current Innovative trends in applied Biosciences-CITABS” at Lahore Garrison University, Lahore on 21-22 November, 2022.
- vi- Participated in “4<sup>th</sup> international conference on emerging trends in bioinformatics and biosciences (ICETBB-2022)” at University of Mansehra, Pakistan on 15<sup>th</sup>-17<sup>th</sup> September, 2022.
- vii- Participated in “One day provincial stakeholders consultative meeting on feasibility of Opoid Agonist Treatment (OAT)” by UNAIDS and Ministry of narcotics control, Pakistan, on 4<sup>th</sup> February, 2022.
- viii- Participated and organized 4<sup>th</sup> International Conference on “Innovative Biological and Public Health Research” at GC University, Lahore on 7<sup>th</sup> – 8<sup>th</sup> December, 2021.
- ix- Participated in webinar on “Exploring molecular phenotypes of incident breast cancer through population-based proteogenomics” on 6<sup>th</sup> December, 2021.
- x- Participated in “20<sup>th</sup> Shaukat Khanum Cancer Symposium, 2021” on 5<sup>th</sup> – 7<sup>th</sup> November, 2021. viii- Participated in “19<sup>th</sup> Shaukat Khanum Cancer Symposium, 2020” at Pearl Continental Hotel, Lahore on 6<sup>th</sup> – 8<sup>th</sup> November, 2020.
- ix- Participated and organized 3<sup>rd</sup> International Conference on “Innovative Biological and Public Health Research” at GC University, Lahore on 13<sup>th</sup> – 14<sup>th</sup> November, 2019.
- x- Participated and Chaired “Basic Research in Cancer session” in “18<sup>th</sup> Shaukat Khanum Cancer Symposium, 2019” at Pearl Continental Hotel, Lahore on 1<sup>st</sup> – 3<sup>rd</sup> November, 2019.
- xi- Participated in “2<sup>nd</sup> National workshop on Basic tools in bioinformatics: molecular modeling” at GC University, Lahore, Pakistan on 7<sup>th</sup> – 8<sup>th</sup> March, 2019.
- xii- Participated in “39<sup>th</sup> Congress of Zoology”, at Islamia College University, Peshawar, Pakistan on 4<sup>th</sup> – 6<sup>th</sup> March, 2019.
- xiii- Participated and organized “One day international Seminar on Fisheries and Aquaculture” at GC University, Lahore on 1<sup>st</sup> February, 2019.
- xiv- Participated in “4<sup>th</sup> Conference on Advances in Biochemistry and Molecular Biology (CABMB 2018)”, in Sanya, China on 1<sup>st</sup> – 3<sup>rd</sup> December, 2018.
- xv- Participated and Chaired “Basic Research in Cancer session” in “17<sup>th</sup> Shaukat Khanum Cancer Symposium, 2018” at Pearl Continental Hotel, Lahore on 2<sup>nd</sup> – 4<sup>th</sup> November, 2018.
- xvi- Participated and organized “One day workshop on Insecticide resistance and possible outcomes” at GC University, Lahore on 10<sup>th</sup> October, 2018.
- xvii- Participated and organized “3<sup>rd</sup> International Conference on Biosciences” at GC University, Lahore on 9<sup>th</sup> – 11<sup>th</sup> May, 2018.
- xviii- Participated and organized “One day seminar on Cancer Awareness” at GC University, Lahore on 9<sup>th</sup> February, 2018.

xix- Participated in “5<sup>th</sup> International conference on agriculture and fisheries, 2017 in Colombo, Sri Lanka on 7<sup>th</sup> – 9<sup>th</sup> December, 2017.

xx- Participated and organized 2<sup>nd</sup> International Conference on “Innovative Biological and Public Health Research” at GC University, Lahore on 6<sup>th</sup> – 7<sup>th</sup> December, 2017.

xxi- Participated in “16<sup>th</sup> Shaukat Khanum Cancer Symposium, 2017” at Pearl Continental Hotel, Lahore on 10<sup>th</sup> – 12<sup>th</sup> November, 2017.

xxii- Participated in National Workshop on Intellectual Property Protection for the Inventions Related to Agriculture and Animal Sciences at University of Veterinary and Animal Sciences, Lahore on 09-10 October 2017.

xxiii- Participated in “International workshop on Application of Computational biology in Biotechnology” at NIBGE, Faisalabad on 31<sup>st</sup> July, 2017.

xxiv- Participated and organized “One-day seminar on fisheries and aquaculture held at GC University, Lahore on 10<sup>th</sup> February 2017.

xxv- Participated in National workshop on Biosafety training for young scientists held at GC University, Lahore on 20<sup>th</sup> October 2016.

xxvi- Participated in World Fisheries Day Conference held at Virtual University, Lahore on 25<sup>th</sup> November 2015.

xxvii- Participated in seminar on Liver cancer organized by GCU Lahore and Cancer care hospital and research center on 19<sup>th</sup> October, 2015.

xxviii- Participated in 58<sup>th</sup> Annual Meeting of Society of Thrombosis and Haemostasis Research. 12<sup>th</sup>-15<sup>th</sup> February 2014 in Vienna, Austria.

xxix- Participated in “2<sup>nd</sup> Vascular Biology Meeting” held in Medical University of Vienna, Austria on 24<sup>th</sup> January 2014.

xxx- Participated in 9<sup>th</sup> YSA symposium of Medical University of Vienna, Austria on 19-20 June 2013.

xxxi- Participated in “1<sup>st</sup> Vascular Biology Meeting” held in Medical University of Vienna, Austria on 24<sup>th</sup> January 2013.

xxxii- Participated in 8<sup>th</sup> YSA symposium of Medical University of Vienna, Austria on 13-14 June 2012.

xxxiii- Participated in Summer School “Inflammation and Cardiovascular Disease.” held in Obergurgl, Austria from 29.9.2011 – 2.10.2011.

xxxiv- Participated in 7<sup>th</sup> YSA symposium of Medical University of Vienna, Austria on 15-16 June 2011.

xxxv- Participated in 8<sup>th</sup> International symposium on “the Biology of Endothelial Cells” held in Zurich, Switzerland from June 15-18, 2011.

xxxvi- 2<sup>nd</sup> ÖGMBT Meeting held in BOKU, Vienna, Austria on 27<sup>th</sup> -29<sup>th</sup> September 2010.

xxxvii- Participated in 6<sup>th</sup> YSA symposium of Medical University of Vienna, Austria on 16-17 June 2010.

xxxviii- Attended one-day Seminar on “Fish Farmers Convention 2007” arranged by Department of Fisheries, Punjab, Pakistan on 23<sup>rd</sup> May, 2007.

xxxix- Attended One Day Seminar on "Accelerating Innovation through Academia, Industry and Public sector partnership" in collaboration with National Productivity Organization (NPO), Ministry of Industries, Production & Special Initiatives and FAST-NU, Lahore, April, 2007.

xl- Attended one-day seminar on “Spectrometry” arranged by H.A. Shah and Sons, in Holiday Inn, Lahore, March 2007.

xli- Organized workshop on Museum Curation in GC University, Lahore, February 2007.

xlii- Attended one day seminar on “Biodiversity Collection Laws” arranged by Natural History Museum, London, September, 2006.

xliii- Attended 3<sup>rd</sup> Symposium of Pakistan Fisheries Societies held in GC University, Lahore, April 25-26<sup>th</sup>, 2005.

xliv- Attended Second Biological Conference held in Govt. College, Lahore, April 22-24, 2004.

xlv- Attended 23<sup>rd</sup> Zoological Conference Held in Arid University, Rawalpindi, 2003.

xlvi- Attended First Biological Conference Held in Govt. College Lahore, March 28<sup>th</sup>-30<sup>th</sup>, 2002.

xlvii- Attended 22<sup>nd</sup> Zoological Conference Held in Muzafarabad University, 2002.

## **MEMBERSHIPS:**

- i. Member, European Society for Medical Oncology (ESMO) ID: **557160**.
- ii. Member, Biological Society of Pakistan.
- iii. Member, Old Ravians Association, GC University, Lahore.
- iv. General Secretary of Biological Society, GC University, Lahore from 2001-2002.
- v. Member of Science Society, Garrison Degree College for Women, Lahore.2000.
- vi. Member of Islamic Society, Garrison Degree College for Women, Lahore. 2000.

**REFERENCES:**

**1. Prof. Dr. Johannes Schmid,**

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Medical University of Vienna, Austria.

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**2. Prof. Dr. Abida Butt,**

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