

# Dr. Saadiya Zia

## BIOCHEMIST/ MOLECULAR BIOLOGIST

Student Success | Research | Curriculum Development | Data Analysis & Reporting

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### PROFESSIONAL SUMMARY

Resourceful educationist with extensive experience in employing the latest interactive learning techniques to nurture critical thinking among the learners. Acknowledged by the top management for consistently producing exceptional results & developing students' research competencies. Organized 15+ events independently and within teams. Expertise in designing coherent, engaging & high-quality subject curricula. High sense of self-direction to deliver prodigious research results within tight deadlines. Strong communication and problem-solving skills with exceptional competency to build collaborative relationships.

### NOTABLE ACCOMPLISHMENTS

- Awarded cash prize at Akhtar Saeed Medical College for accomplishing 100% result in Biochemistry.
- Trained a group of 7 junior researchers on the latest molecular biology techniques within 2 weeks, with a 95% post-training effectiveness.

### PROFESSIONAL COMPETENCIES

Spectrophotometer	ELIZA	Bone Marrow Isolation	Presentation
SDS- PAGE	Transformation	Hemocytometer	Research Writing
Nucleic Acid Extraction	Flow Cytometry	Giemsa Staining	Coaching/Training
Polymerase Chain Reaction	Cell Viability Assay	Cell Culturing	Team Leadership
Real-Time PCR	Western Blotting	Genotyping	Communication
Thin Layer Chromatography	Silver Staining	Gene Editing- CRISPR	

### WORK EXPERIENCE

#### Assistant Professor & Research Supervisor Biochemistry | University of Agriculture, Faisalabad | Feb 2022 – Present

Taught a batch of 50 BS & 100+ MPhil students. Served as a member of the departmental supervisory committee (SAR). Organized 2 national/international symposiums.

##### *Impact & Results*

- Supervised the research work of 32 BS, 17 MPhil and 2 Ph.D. students.
- Secured an average of 82% for teaching skills in a student survey rolled out by QEC.
- Collaborated with the Pakistan Institute of Nuclear Medicine (PINUM) for research arrangement.
- Submitted 3 research projects to various national/international funding agencies.
- Organized skill-based activities in the Industrial Management-Quality Control course.
- Designed and presented a 2-week Primer designing course to 30 students.
- Managed the departmental e-library of 100 books.

#### Assistant Professor Biochemistry | Gulab Devi Educational Complex, Lahore | Sep 2019 – Feb 2022

Taught Biochemistry to 45 BS students. Employed hybrid (online & classroom) teaching methods.

##### *Impact & Results*

- Commended by the top management for devising the Biochemistry curriculum within 1 week.
- Achieved 100% result of 1st semester including 9 students coached from 65% to 90% uplift in scores.
- Oversaw the operations of the chemical store & improved the accuracy of record management to 100%.
- Acted as a member of the disciplinary committee; resolved an average of 4 grievances within 1 month.
- Prepared self-assessment report (SAR) for the Biochemistry department.

### **Senior Lecturer Biochemistry | Amna Inayat Medical College, Lahore | Mar 2015 - Dec 2016**

#### *Impact & Results*

- Tutored 50 BDS and 100 MBBS 1st & 2nd-year students with results above 90%.
- Demonstrated & supervised biochemistry practical & tutorial sessions based on quantitative analysis.
- Conducted classroom discussions leading to maximized learning with 85% A scores.
- Employed case study learning method to foster practical application of the concepts among the students.

### **Senior Lecturer Biochemistry | AJK Medical College, Muzaffarabad | Dec 2011 - Jun 2014**

#### *Impact & Results*

- Taught biochemistry to 100 MBBS 1st and 2nd-year students in the module-based learning system.
- Oversaw Objective Structured Practical Examination (OSPE) stations for genetic counseling.
- Mentored 6 low scorers with performance improvement to 70% within 1 month.
- Arranged counseling-based interactive sessions for students.

### **Assistant Professor Biochemistry | Akhtar Saeed Medical/Dental College, Lahore | Sep 2008 - Jan 2012**

#### *Impact & Results*

- Taught Biochemistry to 100 MBBS 1st and 2nd-year students.
- Served as the member of Research Committee; initiated 3 research projects within 2 months.
- Orchestrated team building activities: selected reticent students as the team leads to boost their confidence.
- Conducted tutorial sessions for students.

### **Research Officer | Center of Excellence in Molecular Biology, Lahore | Apr 2008 – Aug 2008**

#### *Impact & Results*

- Collected samples & studied the genetic variations/mutations of congenital cataracts.
- Trained in molecular biology techniques used in criminal sample analysis; examined 3 cases of criminal evidence under supervision in the forensic department.

### **Junior Scientific Officer | Qarshi Research International, Hattar | Dec 2006 – May 2007**

#### *Impact & Results*

- Conducted elemental analysis of cosmetics using Flame Atomic Absorption Spectrophotometer technique.
- Tested the pH & TDS levels of the bottled water (Springley) produced by Qarshi Industries.
- Carried out the elemental analysis of samples from the food companies.
- Performed quality controls checks on the products produced by the company.
- Trained in tissue culturing of herbal plants.

## **EDUCATION**

Ph.D. Biochemistry | COMSATS University, Islamabad, Pakistan | 2019 | CGPA: 3.83/4

M.Phil. Biochemistry | Quaid i Azam University, Islamabad, Pakistan | 2006 | CGPA: 4.3/5

MSc Biochemistry | Quaid i Azam University, Islamabad, Pakistan | 2004 | 82.9%

## **PUBLICATIONS**

- Naz F, Ejaz S, Wali T, Nudrat A, Arif MAR, Waheed MQ, Hussain F, **Zia S.** KPT-330, A New Candidate Drug for Targeting NOTCH1 Overexpression in T-cell Acute Lymphoblastic Leukemia, An In Vitro and Silico Study. Cell Biochem Biophys. 2025 Apr 11. (IF = 1.8)
- **Zia, S.**, Rehman, N., Ejaz, S., Shahid, M., Ali, M., & Shahid, R. (2024). Transcriptomic and in silico analysis of BLACE (B-cell acute lymphoblastic leukemia expressed), a new non-coding RNA, as a diagnostic biomarker in B-cell ALL. The International Journal of Biochemistry & Cell Biology, 106698. (IF = 3.4)
- Karamat, M., Asim, M., Hafeez, J., Bilal, A., Sami, A., **Zia, S.**, & Hussain, F. (2024). Structural characterization, antioxidant, antidiabetic and antimicrobial activities of *Trachyspermum ammi* and *Foeniculum vulgare*. Pakistan Journal of Science, 76(02), 314-323.

- Asim, M., Sami, A., Hafeez, J., **Zia, S.**, & Hussain, F. (2024). Chemical fingerprint and phytochemical studies of *Ocimum basilicum* and *Ocimum tenuiflorum*. Pakistan Journal of Science, 76(02), 240-248.
- Aslam, J., Ali, H. M., Hussain, S., Ahmad, M. Z., Siddique, A. B., Shahid, M., Shahzad, M. I., Fatima, H., Tariq, S., Sadiq, F., Aslam, M., Farooq, U., **Zia, S.**, ... & Alarjani, K. M. (2024). Effectiveness of cephalosporins in hydrolysis and inhibition of Staphylococcus aureus and Escherichia coli biofilms. Journal of Veterinary Science, 25(3). (IF = 1.8).
- Ali, M., Asghar, E., Ali, W., Mustafa, G., Ansari, I. A., **Zia, S.**, ... & Khan, S. (2024). Screening of Multitarget Compounds against Acetaminophen Hepatic Toxicity Using In Silico, In Vitro, and In Vivo Approaches. Molecules, 29(2), 428. (IF = 4.6)
- Riaz, M., Khalid, R., Afzal, M., Anjum, F., Fatima, H., **Zia, S.**, ... & Aslam, M. A. (2023). Phytobioactive compounds as therapeutic agents for human diseases: A review. Food Science & Nutrition. (IF = 3.553)
- **Zia, S.**; Tehreem, K.; Batool, S.; Ishfaq, M.; Mirza, S.B.; Khan, S.; Almashjary, M.N.; Hazzazi, M.S.; Qanash, H.; Shaikh, A., ... & Shahid, R. (2022). Epithelial Cell Adhesion Molecule (EpCAM) Expression Can Be Modulated via NFκB. Biomedicines. (IF = 4.757)
- **Zia, S.**, Khan, N., Tehreem, K., Rehman, N., Sami, R., Baty, R. S., ... & Shahid, R. (2022). Transcriptomic Analysis of Conserved Telomere Maintenance Component 1 (CTC1) and Its Association with Leukemia. Journal of Clinical Medicine, 11(19), 5780. (IF = 4.964)
- Zafar, F., Shahid, M., Fatima, H., Riaz, M., Anjum, F., Mushtaq, Z., **Zia, S.**, Jahangir, M.M., Aslam, M.A. (2022). Antibiofilm and Quorum Sensing Inhibition (QSI) Potential of Lagerstroemia speciosa Leaves Extract. Dose-Response. 20(4). (IF = 2.623)
- **Zia, S.**, Batool, S., & Shahid, R. (2020). Could PCSK9 be a new therapeutic target of Eugenol? In vitro and in silico evaluation of the hypothesis. Medical Hypotheses, 136, 109513. (IF = 4.411)
- **Zia, S.**, Baqri, N., & Shahid, R. (2020). Glia maturation factor gamma is a novel diagnostic marker of leukemia and has TAL1 binding sites in its promoter. Journal of King Saud University-Science, 32(1), 511-517. (IF = 3.829)
- Baqri, N., **Zia, S.**, Ishfaq, M., Shahid, R. (2020). Leukocyte telomere length shortening among MI patients is associated with smoking. Bulletin of Environment, Pharmacology, and Life Sciences. 9(3), 58-62
- **Zia, S.**, & Shahid, R. (2019). Mutagenic players in ALL progression and their associated signaling pathways. Cancer Genetics. 233-234, 7-20. (IF = 2.169)
- Guo, X., Zhang, Y., Mayakonda, A., Madan, V., Ding, L.W., Lin, L.H., **Zia, S.**, ... & Yin, D. (2018). ARID1A and CEBPα cooperatively inhibit UCA1 transcription in breast cancer. Oncogene. 37(45), 5939. (IF = 8.756)

## BOOKS

- Asim, M., **Zia, S.**, Rashid, H. U., Nasir, A., & Hussain, F. (2024). Nanotherapeutic approach for diabetic wound healing: Cross-talk between redox molecules.
- Maqbool, M., Mazhar, M. U., **Zia, S.**, Muzaffar, H. A., & Shamim, A. Proteomics and Metabolomics in Parasitic Research. In Omics Approaches in Veterinary Parasitology (pp. 88-108). CRC Press.
- Akhtar, B., Tanveer, A., Sharif, A., Anjum, F., Shahid, M., & **Zia, S.** (2024). Nanomedicines in Treatment of Cancer. In Nanomedicine in Treatment of Diseases (pp. 183-211). Singapore: Springer Nature Singapore.

## RESEARCHES SUPERVISED

- Anti-Inflammatory Activity and Biofilm Inhibition Potential of *Ixora Finlaysoniana* Against Pneumonia | 2025
- Expression of methionine synthase (*MTR*) gene in hepatocellular carcinoma and its association with homocysteine and 5-methylenetetrahydrofolate | 2024
- Assessment of CAT-25 and BAT-25 mononucleotide microsatellite instability biomarker in colorectal cancer | 2024
- *NOTCH-1*: a new therapeutic target of Selinexor (KPT-330) in T-cell acute lymphoblastic leukemia | 2024
- To elucidate the antioxidant and anti-inflammatory properties of *Ocimum basilicum* and *Curcuma longa* in gastric ulcer | 2024

- Sodium nitrite induced oxidative stress in mice and expression of *APEX1* gene | 2024
- Targeting angiogenesis in T-cell acute lymphoblastic leukemia by down-regulating *iNOS* gene expression by eugenol | 2024
- Formaldehyde induced chronic obstructive pulmonary disease (COPD) in mice and its detection by lung specific biomarkers | 2024
- Assessment of HSP110 and BAT-26 microsatellite instability markers in colorectal cancer patients | 2024
- Therapeutic potential of *Salvia officinalis* against dental plaque | 2024
- miR-155: A new therapeutic biomarker in rheumatoid arthritis and its association with *SOCS1* gene and telomere length | 2024
- miRNA-195, A new prognostic biomarker in liver cancer | 2024
- Screening Of CAT-25 Microsatellite Instability Biomarker In Pakistani Population | 2023
- Screening Of HSP110 And BAT-26 Microsatellite Instability Biomarker In Pakistani Population | 2023
- Telomere Dynamics And Regulation In Cancer Cells | 2021
- G-Quadruplexes As Therapeutic Targets In Cancer | 2021
- Role Of Estrogen In The Progression Of Breast Cancer | 2021
- Genetic Association Of Obesity And Cancer | 2021
- Therapeutic Implications Of Medicinal Plants In Cancer | 2021
- Therapeutic Effect Of Multivitamins On Lead Toxicity | Co-supervised 2021
- Role Of Cadmium Toxicity In Cancer Initiation And Development | Co-supervised 2021
- Role Of Diagnostic Biomarkers In Chronic Obstructive Pulmonary Disease | 2020
- Chronic Obstructive Pulmonary Disease And Its Association With Osteoporosis | 2020
- Severe Acute Respiratory Syndrome Coronavirus 2: An Emerging Pathogen's Mechanism Of Viral Entry & Replication Into Host Cell | 2020

## RESEARCH EXPERIENCE

**Research Fellow | Cedars Sinai Medical Center, University of California, USA | Feb 2017 – Aug 2017**

- Investigated the therapeutic effect of naturally occurring biomolecules on leukemia cell lines.
- Analyzed the Hematopoietic differentiation & transformation studies using the mice model.

**Ph.D. | COMSATS University Islamabad, Pakistan | Jan 2015 – Dec 2017**

Studied the “Correlation of telomere length & genetic predisposition to acute lymphoblastic leukemia among Pakistani population”.

Conducted an In-depth research on:

- Expression analysis of ALL specific genes, genes related to telomere length modulation, cancer cell motility, proliferation, & lipid metabolism.
- Telomere length measurement.
- DNA secondary structures: G-quadruplexes, Intercalated motifs & their interaction with anticancer agents.
- New therapeutic interventions for ALL treatments by using naturally occurring biomolecules.

**M.Phil. | Quaid I Azam University Islamabad, Pakistan | Sep 2005 – Jun 2006**

Investigated the “Lipopolysaccharide & Protein profiles of *Pasteurella multocida*”.

Compared the vaccinal strains & field isolates by:

- Biochemical characterization, API NE 20, antibiotic susceptibility tests & molecular techniques including SDS- PAGE, silver staining & western blotting.

## ORAL/POSTER PRESENTATIONS

**International Symposium on Medicinal Plants and Natural Products | The University of Agriculture Faisalabad | 2024**

- Screening of Multitarget Compounds against Acetaminophen Hepatic Toxicity Using In Silico, In Vitro, and In Vivo Approaches

**International Conference on Food & Applied Sciences | Shaheed Benazir Bhutto Women University Peshawar | 2024**

- To elucidate the antioxidant and anti-Inflammatory properties of *Ocimum basilicum* and *Curcuma longa* in gastric ulcer.
- Assessment of therapeutic effects of *Euphorbia hirta* leaf extracts and nanoparticles.
- Screening of HSP110 and BAT-26 microsatellite instability biomarkers in Pakistani population.
- Bioanalytical characterization of *Origanum vulgare* leaves extract and its nanoparticles.

#### **International Conference on Food & Applied Sciences | Shaheed Benazir Bhutto University| 2023**

- Could PCSK9 be a new Therapeutic Target of Eugenol? In vitro and in silico evaluation of hypothesis.

#### **International Symposium on The Recent Advances in Life Sciences | The University of Agriculture Faisalabad | 2023**

- Epithelial Cell Adhesion Molecule (EpCAM) Expression Can Be Modulated via NFκB.
- Antibiofilm and Quorum Sensing Inhibition (QSI) Potential of *Lagerstroemia speciosa* Leaves Extract. Dose-Response.

#### **Global Conference on Sustainable Developments in Agriculture, Biochemistry & Biotechnology (SDABB) | The Women University Multan | 2023**

“Transcriptomic Analysis of Conserved Telomere Maintenance Component 1 (CTC1) and Its Association with Leukemia”.

#### **International Conference on The Recent Innovations In Molecular Sciences (ICPU) | Punjab University, Lahore | 2019**

“Glia maturation factor gamma, a novel diagnostic marker of leukemia has TAL1 binding sites in its promoter”.

### **TRAININGS**

- Computational Tools | Rawalpindi Women University | 2023
- Bioassays For Exploration Of Bioactives | 2022
- Collaborative Institutional Training Initiative (CITI Program) | Cedars-Sinai Medical Center, LA, USA | 2017
- EHS ALL Hazards Lab Safety QUIZ | Cedars-Sinai Medical Center, Los Angeles, USA | 2017
- Corporate Integrity | Cedars-Sinai Medical Center, Los Angeles, USA | 2017
- Lab/ Rad Safety Training v5 - COPY | Cedars-Sinai Medical Center, Los Angeles, USA | 2017
- Cultural Influences for Unlicensed Staff | Cedars-Sinai Medical Center, Los Angeles, USA | 2017
- Health and Safety | Cedars-Sinai Medical Center, Los Angeles, USA | 2017
- Research Methodology | UHS, Lahore | 2010

### **WORKSHOPS**

- Research Methodology for Research Scholars | Faisalabad Medical University | 2024
- Basic Tools of Bioinformatics for Molecular Biology and Biomedical Research | University of Agriculture Faisalabad | 2023
- CRISPR Applications in Biological Systems | University of Agriculture Faisalabad | 2023
- Induction Training Workshop for Newly Appointed Faculty | University of Agriculture Faisalabad | 2022
- Women in Nuclear Science and Technology | NIBGE | 2022
- Study Designs And Analysis In Biomedical Research | University of Agriculture Faisalabad | 2022
- Effective Use of Power Lab | AJ&K Medical College, Muzaffarabad | 2012
- Curriculum Development | AJ&K Medical College, Muzaffarabad | 2012
- E-Learning | UHS, Lahore | 2011
- Curriculum Designing and Construction of MCQs & SEQs | UHS, Lahore | 2011
- Medical Ethics | UHS, Lahore | 2011

### **SYMPOSIUMS**

- International Symposium on Medicinal Plants and Natural Products | The University of Agriculture Faisalabad | 2024
- International Symposium on The Recent Advances in Life Sciences | The University of Agriculture Faisalabad | 2023

- [Recent Advances in Life Sciences \(International\)](#) | University of Agriculture Faisalabad | 2023
- [Nutritional Biochemistry](#) | University of Agriculture Faisalabad | 2022
- [1st Annual Symposium](#) | AJ&K Medical College, Muzaffarabad | 2013