CIRRICULUM VITAE

Naseema Azim

naseemaazeem@yahoo.com

Personal Information

Name:	Naseema Azim
Fathers Name:	Muhammad Azim
Date of Birth:	1st September, 1985
Nationality:	Pakistani
Address:	School of Biological Sciences, University of the Punjab, Lahore, Pakistan.

Education

Academic Qualification

2007-2014	M.Phil leading to Ph. D. in School of Biological Sciences, University of the Punjab, Lahore, Pakistan.
2005-2007	M. Sc. (Biochemistry) from Department of Biochemistry, University of the Agriculture, Faisalabad, Pakistan. CGPA 3.96/4.00 **Distinction**: Silver Medal
2003-2005	B.Sc. (Botany, Zoology & Chemistry) from Govt. Viqar-un-Nisa College for Women, Rawalpindi. 1st division
2000-2002	F.Sc from Govt. Viqar-un-Nisa College for Women, Rawalpindi. 1st division
2000	SSC from PAF School Jinnah Camp. 1st division

Certification

Secured 85 percentile in Graduate Record Examination (Biochemistry, Cell and Molecular biology), Educations Testing Service, Princeton, NJ, USA. 2008

My first hand experience in the lab has provided me proficiencies in various techniques from various fields like

- **Protein Chemistry** including heterologous/ recombinant protein expression, protein extraction from tissues, protein purification techniques, enzyme chemistry and kinetic studies. Protein modification and proteomic analysis by mass spectrometery. I have been using various chemistry like column chromatography including ion exchange, hydrophobic and gel filtration principles, Fast protein liquid chromatography (FPLC), High performance liquid chromatography (HPLC), Circular Dichroism spectroscopy, Fluorescence

spectroscopy, Atomic absorption spectroscopy. I also have experience with protein crystallography and structure analysis.

- **Molecular Biology** including isolation of DNA from bacteria, archaea and blood, gene amplification by PCR, sequencing, gene cloning and manipulation and strategies of recombinant DNA production.
- **Microbiology** including basic microbial culturing and maintenance, microbial transformation.

Scholarships

- International research initiative support program by Higher Education Commission. (2012)
- Indigenous PhD scholarship by Higher Education Commission. (2007-2013)
- Merit scholarship for M.Sc Biochemistry by University of Agriculture, Faisalabad. (2005-2007)
- Talent farming scholarship by HEC (2002)

Job and Research Experience

Senior Research Officer

I joined this post in August 2019 at School of Biological Sciences, University of the Punjab, Lahore. I am currently involved mechanistic and proteomic analysis of enzymes and peptides. I am also actively involved in teaching activities at the institute.

Post-Doctoral Fellowship/ Experimental Officer

I worked on this post from April 2015 to July 2019 at School of Biological Sciences, University of the Punjab, Lahore. As a Post-Doc. Fellow I conducted wet research work as a chemical enzymologist to decipher certain ambiguities in the function and working of the enzyme porphobilinogen synthase from *Pyrobaculum calidifontis* and proposed a mechanistic chain of events at the active site. I have also prepared different classes for International Graduate Record Examination in the fields of Biochemistry, Molecular and Cell Biology as well as actively teaching various biochemistry related subjects to M. Phil and Ph.D. classes at School of Biological Sciences.

Research Officer

I held the post of research officer at School of Biological Sciences, University of the Punjab, Lahore for a period of one year (April 2014 to April 2015). During this period I worked on protein chemistry and kinetics problems.

Research Topic: ***Heme biosynthetic pathway in hyperthermophilic archaea.***

This study was carried out under the supervision of Prof. M Akhter FRS at School of Biological Sciences, University of the Punjab, Lahore, Pakistan from 2009-2014. The focus of the study was hetrologous production of some heme synthesis protein from a hyperthermophilic archaeon and their in-depth enzymatic studies.

Research Topic: ***Structural studies of protein involved in heme biosynthesis.***

This work was a part of International Research Support Initiative Program (*IRSIP*) by HEC carried out between January 2013 to June 2013 at Centre for Amyloidosis and Acute Phase Proteins, Dept Of Medicine, University College London, Royal Free Campus under supervision of Professor Jonathan B. Cooper. The study emphasized on crystallization of heme biosynthesis proteins and their structure determination using X-ray crystallography.

Research Topic: ***Decolorization of colored textile industry effluents by white rot fungus Coriolus versicolor IBL-04.***

This research was carried out under the supervision of Prof. Muhammad Asgher at Department of Biochemistry, University of the Agriculture, Faisalabad, Pakistan during the year 2006-2007. The study explored the idea of using a white rot fungus for liquid waste treatment.

Publications

International Journals

- **Azim N**, Gardner QA, Rashid N, Akhtar M. (2019) Mechanistic studies on Pyrobaculum calidifontis porphobilinogen synthase (5-aminolevulinic acid dehydratase). Bioorganic Chemistry. Oct; 91 103117. doi:10.1016/j.bioorg.2019.103117. (Impact factor: 3.926)
- N. Mills-Davies, D. Butler, E. Norton, D. Thompson, M. Sarwar, J. Guo, R. Gill, **N. Azim**, A. Coker, S. P. Wood, P. T. Erskine, L. Coates, J. B. Cooper, N. Rashid, M. Akhtar and P. M. Shoolingin-Jordan (2017) Structural studies of substrate and product complexes of 5-aminolaevulinic acid dehydratase from humans, Escherichia coli and the hyperthermophile Pyrobaculum calidifontis. Acta Crystallographica Section D 73, (9-21). (Impact factor: 3.099)
- **N. Azim**, E. Deery, M. J. Warren, P. T. Erskine, J. B. Cooper, S. P. Wood and M. Akhtar, (2014) Structural evidence for the partially oxidised dipyrromethene and dipyrromethanone forms of the cofactor of porphobilinogen deaminase - structures of the *Bacillus megaterium*

enzyme at near-atomic resolution. Acta Crystallographica Section D 70, (744–751). (Impact factor: 2.680)

- **N. Azim**, E. Deery, M. J. Warren, P. T. Erskine, J. B. Cooper, S. P. Wood and M. Akhtar, (2013) Crystallization and preliminary X-ray characterization of the tetrapyrrole-biosynthetic enzyme porphobilinogen deaminase from *Bacillus megaterium*. Acta Crystallographica Section F 69(906–908). (Impact factor: 0.568)
- Muhammad Asgher, **Naseema Azim**, Haq Nawaz Bhatti, (2009) Decolorization of practical textile industry effluents by white rot fungus *Coriolus versicolor* IBL-04. Biochemical Engineering Journal 47(1-3), Pages 61-65. (Impact factor: 2.58)

Cumulative impact factor 12.853

Protein structures submitted in RCSB PDB

- **5LZL**
  - Pyrobaculum calidifontis 5-aminolaevulinic acid dehydratase. Mills-Davies, N.L., Butler, D., Norton, E., Thompson, D., Sarwar, M., Guo, J., Gill, R., **Azim, N**., Coker, A.R., Wood, S.P., Erskine, P.T., Coates, L., Cooper, J.B., Rashid, N., Akhtar, M., Shoolingin-Jordan, P.M.
- **4MLQ**
  - Crystal structure of Bacillus megaterium porphobilinogen deaminase. **Azim, N**., Deery, E.C., Warren, M.J., Wolfenden, B.A., Erskine, P., Cooper, J.B., Coker, A.R., Wood, S.P., Akhtar, M.
- **4MLV**
  - Crystal Structure of Bacillus megaterium porphobilinogen deaminase. **Azim, N**., Deery, E.C., Warren, M.J., Wolfenden, B.A., Erskine, P., Cooper, J.B., Coker, A.R., Wood, S.P., Akhtar, M.

Conferences and Workshops

Organized

- National workshop on "Recombinant Protein Production." 6^{th}-11^{th} November 2019 School Of Biological Sciences Punjab University Lahore
- National workshop on "Recombinant Protein Production." 12^{th}-17^{th} November 2018 School Of Biological Sciences Punjab University Lahore

- National workshop on "Recombinant Protein Production." 6th-11th November 2017 School Of Biological Sciences Punjab University Lahore
- 3rd National workshop on "Recombinant DNA Technology" 3-8th April 2017 School Of Biological Sciences Punjab University Lahore
- 2nd National workshop on "Recombinant DNA Technology" 25-30th April 2016 School Of Biological Sciences Punjab University Lahore
- International symposium on "Glycol-Proteins In Health And Disease" 27-29th May 2008 School Of Biological Sciences Punjab University Lahore

Participated

- ICPU 2019: "Recent Innovations in Molecular Sciences" 6th- 8th November 2019 University of the Punjab, Lahore.
- International Workshop on Radiation Biotechnology Applied Radioisotope Science 21st – 23rd October 2019 Department of Nuclear Engineering, Pakistan Institute of Engineering and Applied Sciences, Islamabad.
- 2nd International workshop on "X-Ray Crystallography in Structural Biology" 15-19 October 2016 FC College University Lahore.
- Separation Science and the Omics 6-10 April 2009 School Of Biological Scinces PU.
- Advances In Biochemistry And Molecular Biology 17-20th December 2008 Biochem Department Arid Agriculture University Rawalpindi.