

Integrative Biosciences Research Group



GROUP INTRODUCTION

Integrative Biosciences research group at Capital University of Science and Technology (CUST), Islamabad, Pakistan was founded in December 2015 under the supervision of Dr. Sahar Fazal, who is now serving as head of Department of Bio-Sciences at CUST. The group has been working in diverse areas within the domain of Biological Sciences (Molecular Biology, Microbiology, Entamology, Genetics & Biotechnology) & Computational Biology.

GROUP HEAD

Dr. Sahar Fazal

Dr. Sahar Fazal has completed her Post-Doctoral degree in Biochemistry and Molecular Genetics at the University of Sussex, Brighton, UK and her Ph.D. in Applied Chemistry at the South China Agriculture University. She is currently serving as the HOD and Associate Professor in the Department of Biosciences, CUST, Islamabad. Her devotion towards research has been proved by her dynamic Portfolio. Dr. Sahar focuses on collaborating biological sciences with computational biology. Her contribution to biological sciences as a team leader in IBRS is really appreciable, being aware of the present need of research and so helping the group members to update their understanding for applied site of bioinformatics. Dr. Sahar Fazal possess

the ability of providing the best Platform to the members so that they can excel their hidden abilities for solving biological problems scientifically. Her major interests include bioinformatics (phylogenetic, protein interactions, modeling, pathways), resistance management, molecular entomology, microbiology and genetics.

RESEARCH AREAS

- Human Genetics, Molecular Genetics, Micobiology Molecular Entomology and Phylogenetics.
- Pharmacokinetics, Dynamics, Data-mining of Biological Networks.
- Systems Biology, Cancer Pathways and Resistance Management.
- Mathematical Modeling and Simulations.
- Protein ,Protein Interections
- Pathways

GROUP MEMBERS

1.	Ms. Attiya Kanwal	PhD. Scholar
2.	Ms. Shanila Emmanuel	PhD. Scholar
3.	Ms. Rabbiya Manzoor	PhD. Scholar
4.	Ms. Fakhra Nazir	PhD. Scholar
5.	Ms. Anam Tariq	PhD. Scholar
6.	Ms. Sana Elahi	PhD. Scholar
7.	Ms. Shumaila Azam	PhD. Scholar
8.	Ms. Anila Sajid	MS Scholar
9.	Ms. Almas Zahra	MS Scholar
10	. Ms. Samar Manzoor	MS Scholar

PhD ALUMNI

Ms. Nighat Noureen: Thesis Title: Genome wide mapping of chromatin states based on histone combinatorics for determination of epigenetic expression. Year: 2016

MS ALUMNI

Ms. Anila Sajjad: Thesis Title: Delineating the invitro biological and qualitative analysis of selected herbal teas. **Year:** 2018

Mr. Syed Nouman Hassan Shah: Thesis Title: Isolation and identification of microbial pathogens from M. domestica, Important for human health. Year: 2018

Mr. Syed Ehtisham Zulfiqar: Thesis Title: Disease pattern identification exploring metabolic pathways in breast cancer. Year: 2018

Ms. Shumaila Azam: Thesis Title: P53 Revival Using System Oriented Dosage Design Targeting MDM2. Year: 2016

Ms. Rozina Tabassum: Thesis Title: Computational assay for drug designing of Antiphospholipd Syndrome. Year: 2015

Ms. Faryal Khattak: Thesis Title: Mathematical Modeling of E6 Protein of Human Papiloma Virus.

Year: 2015





Selected Publications

Journal Publications

- A. Kanwal and S. Fazal, "Construction and analysis of protein-protein interaction network correlated with ankylosing spondylitis", Gene, Vol. 638, pp. 41–51, 2018.
- M. R. Azam, S. Fazal, M. Ullah, and A. I. Bhatti, "System-based strategies for p53 recovery", **IET Systems Biology**, vol. 12, no. 3, pp. 101–107, 2018.
- M. T. Khan, S. I. Malik, A. I. Bhatti, S. Ali, A. S. Khan, M. T. Zeb, T. Nadeem, and S. Fazal, "Pyrazinamide-resistant mycobacterium tuberculosis isolates from Khyber Pakhtunkhwa and rpsA mutations", Journal of Biological Regulators and Homeostatic Agents, vol. 32, no. 3, pp. 705–709, 2018.
- A. Munir, S. Azam, S. Fazal, and A. I. Bhatti, "Evaluation of the whole body physiologically based pharmacokinetic (wb-pbpk) modeling of drugs", Journal of Theoretical Biology, vol. 451, pp. 1–9, 2018.
- F. Khattak, M. Haseeb, S. Fazal, A. I. Bhatti, and M. Ullah, "Mathematical modeling of E6-p53 interactions in cervical cancer", Asian Pacific Journal of Cancer Prevention, vol. 18, no. 4, pp. 1057–1061, 2017.
- M. Haseeb, S. Azam, A. I. Bhatti, R. Azam, M. Ullah, and S. Fazal, "On p53 revival using system oriented drug dosage design, Journal of Theoretical Biology, vol. 415, pp. 53–57, 2017.
- N. Noureen, H. M. Zohaib, M. A. Qadir, and S. Fazal, "ChromBiSim: Interactive chromatin biclustering using a simple approach", Genomics, 2017.

Conference Proceedings

- A. I. Bhatti, M. Haseeb, S. Azam, S. Fazal, and M. Ullah, "State feedback based intervention design in WNT and cell cycle network", American Control Conference (ACC), pp. 4242–4247, IEEE, 2017.
- M. N. Sharif, A. I. Bhatti and S. Fazal, "Observer design and analysis of wnt-cell cycle joint pathway", Asian Control Conference 2017, pp.1470-1475, IEEE, 2017
- S. E. Aziz, S. Fazal, S. Hussain and H. Rashid, "Detection of relationship between breast cancer and ovarian cancer through network analysis", **2nd conference on emerging trends in Bioinformatics**, pp. 19, 2014.