

**AYESHA SIDDIQA**

Date of birth: 5<sup>th</sup>, May, 1991  
Nationality: Pakistan  
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**RESEARCH INTERESTS**

Biochemistry, Environmental microbiology, Biotechnology, molecular biology, Bio-remediation, Phyto-remediation, Bio-fortification, Micronutrients their Anti-tumor effects and Cell Culturing, Human Genetics

**EDUCATION**

- 2014-2016: M.Phil. Department of Microbiology and Molecular Genetics (**MMG**), University of Punjab Lahore, Punjab, (Pakistan)(Cumulative GPA 3.47/4.00)  
**Thesis Title:** Investigation of Selenium Biofortification in Lentils by *Bacillus* spp.
- 2011-2013: M.Sc. Department of Microbiology and Molecular Genetics (**MMG**), University of Punjab Lahore, Punjab, (Pakistan) (Cumulative GPA 3.52/4.00)  
**Thesis Title:** transformation of Selenium salts by indigenous *Bacillus* spp
- 2009–2011: B.Sc. (Bio-chemistry, Genetics, Zoology) **Queen Mary College**, Lahore, Punjab, (Pakistan) (70%Marks 561/800)
- 2007-2009: F.Sc. Intermediate Pre-medical group, **Government Islamia College** Lahore Cantt Punjab, (Pakistan) (72%Marks 797/1100)
- 2007: Matric, **ESL P.R. Beacon High School** Mughalpora Lahore, Punjab (Pakistan) (BISE ) (85%marks 724/850)

**RESEARCH EXPERIENCES**

Department of Microbiology and Molecular Genetics, University of the Punjab Lahore

- Isolation and characterization of bacteria, yeast and fungal strains by soil, food, water, clinical, industrial samples (M.Sc.)
- Analysed the effects of different parameters on the Bio- remediation by bacteria (M.Sc)

- Examined the bio-fortified lentils with selenium in relation to the effect caused by PGPR (M.phil)
- Impact of UV treatment on Exotoxin Production by *Bacillus* spp. (M.sc.)
- Experimented and analysed the positive anti-tumor effect of Selenium salts on the Acute Lymphocytic Leukemia (ALL) (M.phil)
- Synthesis of Nano particles and analysis of their different properties and antimicrobial activity
- Observation and extraction of Se resistant biofilm producing bacteria from industrial waste water (M.phil)
- Made a documentary “ living on the edge with carcinogens and their challengers”, part of course work (M.phil)
- Isolation and extraction of antimicrobial substances produced by actinomyces (M.phil)

## **PUBLICATIONS:**

### **Articles published in journals.**

- Siddiq, A., Munir. R., Faysal. M. Anti-tumor effects of Sodium Selenite on Acute Lymphocytic Leukemia. *J Can Res Ther* 2021; 17:266-8.
- Impact of UV Treatment on Exotoxin production by *Bacillus* species (2016), Akhtar Mahvish, Siddiq Ayesha and Faisal Muhammad, *Research Journal of Biotechnology*, Vol. 11 (3), 92-99
- Selenium Detoxification by *Bacillus* spp. Isolated from indigenous polluted sites (2014), Ayesha Siddiq, Shaiq Sultan and Muhammad Faisal, *Journal of Environment and Earth* Vol.4, 196-201

### **• Book chapters**

1. Ayesha Siddiq, Muhammad Faisal, 2021. Microbial degradation of organic pollutants using indigenous bacterial strains. In: *Handbook of Bioremediation*, Hasanuzzaman M., Prasad, M. N. V., (eds) 625-637. Elsevier. London.
2. Ayesha Siddiq and Muhammad Faisal, 2020. Heavy Metals: Source, Toxicity Mechanisms, Health Effects, Nanotoxicology and Their Bioremediation. In: *Contaminants in Agriculture Sources, Impacts and Management*. Naeem M., Ansari A.A., Gill S.S., (eds), 117-142. Springer. Switzerland
3. Ayesha Siddiq and Muhammad Faisal, 2018. Phytoremediation of Chromium-Polluted Soil Using Plants in Conjunction with Microbes In: *Phytoremediation: Management of Environmental Contaminants* vol 6, A. A. Ansari et al. (eds.), 215- 234. Springer. Switzerland.

## **MANUSCRIPT IN PROGRESS:**

- Amir Sumbal, Ayesha Siddiq, Muhammad Faisal. Occurrence of Tuberculosis with respect to the age groups of District Muzaffar Garh, Pakistan

## CONFERENCES AND WORKSHOPS:

- PARTICIPATED IN THE National Conference on Quality Assurance in Higher Education Institutions: Challenges and Reforms.
- Attended International conference on RECENT INNOVATIONS IN MOLEULAR SCIENCES, Department of Botany, University of the Punjab, Lahore, Pakistan. November 6-8, 2019.
- Attended Three Days Hands-on Training “Recombinant DNA Technology and Bioinformatics”, Faculty of Life Sciences, University of Central Punjab, Lahore Pakistan. (25-27 June, 2019)
- Gave oral presentation at 2nd international conference on Plant sciences, Department of Botany, GC University, Lahore, pakistan (ICP- 5th-7th Dec 2018)
- Attended workshop on cell culture practices and applications, Tumor Metabolism Group, MMG, University of the Punjab, Lahore, Punjab, 25th October 2018
- Faculty development orientation program, University of the Punjab, Lahore, Punjab, 4th to 7th ,September 2018.
- International conference on emerging trends in earth and environmental sciences, 9-10 March, 2017.
- Workshop on Basic Statistics Tools, February, 2017
- Bioinformatics workshop on analysis and annotation of variants in NGS data, January 3-4, 2017
- Craft of Scientific Writing- A Two-day intensive workshop on scientific writing and publishing, 6<sup>th</sup> 7<sup>th</sup> dec, 2016
- 4 week induction training of educators ESE/SESE w.e.f., 2016
- “Workshop on nano science & nano technology” GC university Lahore 27<sup>th</sup> August 2015
- “Diversity in Microbiology: A cross talk” University of the Punjab, Lahore 17<sup>th</sup> December 2015
- “38<sup>th</sup> Pakistan Association of Pathology conference” November 6-8 2015
- 10<sup>th</sup> Biennial International Conference of Pakistan Society For Microbiology march 25-28, 2015
- Participated in TechnoSpark’ 14<sup>th</sup> event for Flood Relief Initiative in 2014
- Had been an active member of Pakistan Youth Leadership Forum (PYLF) in 2010-2011
- Worked with private organisation TEHREEK for 6 years
- **ORAL PRESENTATION:** Evaluation of growth promotion in Lens culinary by Bacillus spp. with inorganic fertilizers and subsequent selenium bio-fortification, ASM/PSM, 2014
- **ORAL PRESENTATION:** Investigation of growth promotion in lentils by Bacillus spp. With inorganic bio-fertilizers and subsequent selenium bio-fortification. International conference on emerging trends in earth and environmental sciences, 9-10 March, 2017
- **ORAL PRESENTATION:** 10th Biennial International Conference of Pakistan Society For Microbiology march 25-28,2015

## LIST OF STUDENTS SUPERVISED

**Name of student: Ifra Sohail**

**Roll number: MMG13S18**

**Class: Mphil Spring Session 2018-2020**

Title of thesis: Isolation And Characterization of Selenium Degrading Bacteria and Evaluation of Their Biofortification Potential.

**Name of Student: Ifra sakhawat**

**Roll number: MMG-18-18**

**Class: M. Phil Session 2018-2020**

Title of the Thesis: Isolation and characterization of oil degrading bacteria and their metal resistance profile.

**Name of Student: Ayesha nawaz**

**Roll number: MMG-18-20**

**Class: M.Phil Session 2018-2020**

Title of the Thesis: Determination of physical parameters of indigenous isolates and their chromium reduction

**Name of Student: hafiz muhammad rehan**

**Roll number: MMG-16-44**

**Session bs hors. 2016-2020**

Title of the Thesis: Isolation of chromate reducing bacteria and their chromate detoxification potential

## AWARDS AND HONORS

**Best oral presentation award:**

- **Awarded** with Best paper award by professional researcher (Oral presentation) in ETEES, 2017

**Academic Scholarship**

Lahore, Pakistan

- **Received** full merit-based academic scholarship from HEC at University of the Punjab (2011-2012-2014-2015-2016)

**Prime Minister's Award**

Lahore, Pakistan

- **Received** merit-based Laptop Award from Chief Minister Punjab, Pakistan (2012)
- **Received** merit-based Laptop Award from Prime Minister Pakistan (2014)

**COMMAND ON:**

- Microsoft Office
- Bioinformatics programming using Galaxy, Python, GeneMark
- Presentational skills
- Management skills
- Statistical tools and softwares like Statistix, Genstat Statistical designs (CRD, RCBD etc.) Prism, imagej
- Expertise in computer (Windows, Softwares, Internet surfing)

**REFERENCES**

1. Dr. Muhammad Faysal  
Assistant Professor  
Department of Microbiology and Molecular Genetics (**MMG**), University of Punjab Lahore  
[Mohdfaysal@yahoo.com](mailto:Mo hdfaysal@yahoo.com)
2. Dr. Anjum Nasim Sabri  
Head of Department  
Department of Microbiology and Molecular Genetics (**MMG**), University of Punjab Lahore  
anjum.mmg@pu.edu.pk