ASMA GUL

guleasma01@gmail.com
Asma Gul
https://guleasma.github.io/
+46793174999
Honnörsgatan 1 LGH 1405 587 52 Linköping, Sweden

SUMMARY

Driven by a passion for clinical genetics and seeking a Ph.D. in functional genomics. Holds an MSc in Medical Biotechnology with 2.5 years of experience in the field. Practiced in NGS data analysis, variant interpretation, and clinical cancer genetic testing. Committed to continuous learning and collaborative research in healthcare.

EDUCATION

2023 – 2025 **MSc - Experimental and Medical Biosciences** Transcript

Linköping University, Sweden

Degree project (The Cantù Lab, ongoing 2025): Genomic regulation and chromatin dynamics in cardiomyocytes differentiation from hESCs.
Thesis (The Nestor Lab, 2024): Optimization of CRISPRi (dCas9-TET1) Epigenetic Editing for Targeted *TET2* Reactivation in T-ALL cell lines.

2017 – 2019 **M. Phil - Biotechnology** CGPA = 3.8/4.0

Quaid-i-Azam University, Pakistan Transcript

Thesis: Genetic testing of Amelogenesis Imperfecta through Sanger sequencing
The objective of the study was to identify the genetic cause of the rare enamel disorder, Amelogenesis Imperfecta in a Pakistani family by screening two candidate genes *FAM83h* and *ENAM.* PI: Prof. Muhammed Naeem

2013 – 2017 **BS - Microbiology and Molecular genetics** CGPA = 3.38/4.00

University of the Punjab, Pakistan Transcript

Thesis: Isolation and characterization of bacterial isolates from Citrus canker
This research project aims to isolate bacterial pathogen of citrus plant disease and its control by bacteriophages and actinomycetes extracts. PI: Prof. Shafiq-ur-Rehman

EXPERIENCE

Armed Forces Institute of Pathology (AFIP), Pakistan Certificate

Research Associate

Nov 2019 – March 2022

- Worked on the development and validation of targeted next-generation DNA resequencing for the diagnostic, prognostic and therapeutic genetic testing of solid tumors and myeloid malignancies
- Actively practiced NGS library preparation, sequencing data analysis (using Illumina's integrated bioinformatics pipelines and tools), germline and somatic variant interpretation and clinical reporting of cancer genetic tests (according to ACMG, HGVS, ASCO, and NCCN standards and guidelines) including *BRCA1/2*, Cancer hotspot of 50 genes, TruSight Tumor15, and Myeloid panel of 54 genes using Illumina MiSeq benchtop sequencer and Illumina's reagents for library preparation.
- Worked on the development and validation of Real-time PCR - based assays (using ABI 7500 and QIAGEN's Rotorgene-Q PCR systems) and clinical reporting (according to CAP guidelines) for cancer biomarkers i.e. *EGFR, KRAS, NRAS, PIK3CA, BRAF, IDH1,* and *IDH2*.
- Designed and dished out clinical reports (using LIMS) of the mentioned cancer genetic tests with histopathologists and heamatologists for cancer patients and their oncologists (200+ NGS - based cases, 150+ Real-time PCR - based cases).
- Developed a dedicated molecular biology lab for FFPE (formalin-fixed paraffin-embedded) tissue DNA extraction and its DNA quality check (starting specimen for solid tumor genetic testing)

- Involved in writing grant proposals, training and mentoring students and researchers in NGS lab
- Prepared SOPs (standard operating procedures) and consent forms (including taking family history of patients for genetic counselling) of the mentioned assays, actively involved in the planning and procurement of equipment and reagents, maintained laboratory records

SKILLS AND COMPETENCIES

Wet Lab Techniques:

- Culturing: Mammalian cell culturing (suspension and adherent), bacterial (broth, agar: streaking, spreading), bacteriophage isolation, various media preparation.
- Molecular Biology: Nucleic acid extraction/quantification (DNA/RNA), cDNA synthesis, RT-qPCR, plasmid isolation & verification, PCR optimization & product purification, gel electrophoresis, Sanger sequencing, NGS library preparation, nucleofection, lipofectamine transfection, fluorescence microscopy, flow cytometry, FISH, IHC, protein purification, western blotting

Dry Lab Techniques:

- Ensembl and UCSC genome browsers
- Data Analysis: NGS data analysis (fastqc, alignment, variant calling), variant interpretation, primer design (manual, Primer3Plus, OligoAnalyzer-IDT), mutational analysis (Bioedit, SIFT, MutationTaster, VEP, VarSome), guide RNA design for CRISPRa/CRISPRi (IDT-CRISPR guide RNA design checker)
- Tools: Benchling, SnapGene, BaseSpace, DRAGEN, Galaxy
- Programming: R (intermediate), Bash (basic), Python (basic).

ONLINE COURSES

Certificate of Achievement	**HMX Fundamentals program (Harvard Medical School online learning platform) "Genetics"** Completed on March 26, 2021 (10 weeks long course with a comprehensive exam) Verity on https://hrvd.io/fa7e45cf and enter document ID: fa7e45cf
Certificate of Excellence	**Bioinformatics for Precision Oncology, 3 months online program on Cancer Biology** From March-May, 2020, organized by Pine Biotech, USA

WORKSHOP, TRAININGS AND CONFERENCE

Certificate of Attendance	**Online Workshop on R programming** From 27-28 July, 2020 organized by Cancer Research Centre (CRC) University of Punjab, Pakistan
Certificate of Appreciation	**On Successful run of Illumina TruSight Tumor 15 Panel by Alliance Global** April 13, 2020 at Armed Forces Institute of Pathology, Pakistan
Certificate of Attendance	**Training completion_ Illumina Ampliseq Training by Alliance Global** From Nov 5-7, 2019 at Armed Forces Institute of Pathology, Pakistan
Certificate of Poster presentation	**3rd International Symposium on "Advances in Molecular Biology of Plants and Health Sciences"** From Dec 19-21, 2018, organized by National Centre of Excellence in Molecular Biology, University of Punjab, Pakistan
Certificate of Participation	**Training workshop: Internal systems auditor for ISO 9001:2015 Quality management systems – Requirements** From Aug 20-22, 2019 at The Q Quality, UAE
Certificate of Participation	**4 Days National Winter School on Biotechnology** From Nov 22-25, 2018 at Codon Corps community lab, Pakistan

Certificate of Appreciation	**Training workshop: Next Generation Sequencing (NGS) Data analysis"** From Nov 14-16, 2018, organized by Next Gen. Solutions in collaboration with Pakistan Technological Information Center (PASTIC), Pakistan
Certificate of Participation	**2 Days Training on Biotech Decoded: From CRISPR to Bioelectronics** From Oct 20-21, 2018 at Codon Corps community lab, Pakistan
Certificate of Poster presentation	**3rd International Symposium on "Advances in Molecular Biology of Plants and Health Sciences"** From Dec 19-21, 2018, organized by National Centre of Excellence in Molecular Biology, University of Punjab, Pakistan
Scholarship Awarded	**Pakistan Scottish Scholarship Scheme 2017-2018** Facilitated with Tuition fees for Master's degree and monthly stipend
First Position Certificate	**BSL (Biosafety Level)-1 Laboratory: Design, Budget and Working: A Competition 2017** Held on April 25, 2017, organized by Biosafety and Bio-resource Committee, University of Punjab, Pakistan Link of presentation: https://prezi.com/stubulkn_cff/bsl-1/
Certificate of Organizer	**Two-days Hands-on workshop on "Advances in Phage therapy" 2017** From March 27-28, 2017, organized by dept. of Microbiology and Molecular Genetics, University of Punjab, Pakistan
Certificate of Recognition	**Microbial Art Competition 2017** Held on Feb 14-15, 2017, organized by dept. of Microbiology and Molecular Genetics, University of Punjab, Pakistan

References will be provided upon request.