

Zoe Keihani, MS, MB (ASCP)

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OBJECTIVE

I'm a molecular technologist with hands-on experience in NGS workflows and lab automation, especially Biomek systems. I enjoy troubleshooting, improving workflows, and helping others learn and use these systems effectively. I'm interested in roles where I can combine lab experience with more application-focused and problem-solving work.

EDUCATION

M.S. Biological Data Science (*in progress*)

Arizona State University – Remote

Aug 2024 – May 2026

B.S. Molecular Genetic Technology

University of Texas MD Anderson Cancer Center – School of Health Professions

Houston, TX

Aug 2020 – Aug 2022

M.S. / B.S. Cellular & Molecular Biology – Microbiology

Azad University

Lahijan, Iran

Thesis: Experimental Design of Miniaturized Culture to Identify Enterobacteriaceae Family

Sept 2005 – Dec 2009; Jan 2011 – Sept 2013

WORK EXPERIENCE

Medical Technologist – Clinical Genomics Lab | Texas Children's Hospital

Houston, TX | **Jan 2023 – Present**

- Conduct next-generation sequencing (NGS) library preparation on DNA and RNA samples for somatic and germline analysis.
- Contribute to clinical validation of DNA methylation, whole-genome sequencing, and automated library preparation using **Biomek i7**.
- Assist in validating automated RNA extraction workflows on **Biomek i5**.
- Operate, calibrate, and maintain Illumina sequencing platforms and associated instruments for high-quality data output.
- Train new technologists, fellows, and rotation students on molecular workflows, quality control, and safety protocols.
- Maintain reagent inventory, perform quality control checks, and troubleshoot technical or automation issues.
- Revise standard operating procedures (SOPs), test run worksheets, and evaluate database updates for CLAIMS integration.

- Uphold good laboratory practice (GLP) standards and foster collaborations with internal and external research teams.

Medical Technologist – Molecular Microbiology Lab | Memorial Hermann Hospital

Houston, TX | **Oct 2022 – Dec 2022**

- Performed viral load testing for **EBV, CMV, and VZV** using quantitative PCR platforms.
- Conducted complex diagnostic assays to support clinical management of infectious diseases.

Microbiologist | HCA Hospital

Kingwood, TX | **May 2021 – Apr 2023**

- Performed microbiological testing including COVID-19 and influenza PCR assays, bacterial staining, and culture-based identification.

QC and Inventory Manager | Day Clinical Pathology Diagnostic Lab

Iran | **2016 – 2018**

- Oversaw reagent procurement, quality control, and documentation of laboratory operations.
- Trained new staff in standardized testing procedures and biosafety compliance.
- Revised SOPs and evaluated cost-effectiveness of in-house versus outsourced tests.
- Coordinated equipment maintenance and verified control results to ensure analytical accuracy.

Medical Laboratory Scientist | Mehr Clinical Diagnostic Lab

Iran | **2014 – 2016**

- Performed diagnostic testing across hematology, chemistry, immunology, microbiology.

Medical Laboratory Scientist | Shadmehr Clinical Pathology Diagnostic Lab

Iran | **2009 – 2014**

- Conducted comprehensive clinical testing in hematology, chemistry, immunology, microbiology, pathology, and histology.

CERTIFICATIONS

- ASCP: Technologist of Molecular Biology, MB (ASCP), 2022 – Active
- ASCP Leadership Institute Certificate
- Arizona State University: Health Care Analytics

Skills

Genomics & Bioinformatics

- Variant interpretation and genomic data analysis using ClinVar, Ensembl, GenBank (NCBI), dbSNP, OMIM, and UCSC Genome Browser
- Proficient in Python (pandas, NumPy, Matplotlib) and R (ggplot2) for data processing, visualization, and statistical analysis
- Experience with Linux/Unix environments and shell scripting for bioinformatics pipelines

- Skilled in Jupyter Notebooks for reproducible research and workflow documentation
- Familiar with genomic applications including whole-genome, exome, and targeted sequencing workflows

Molecular & Analytical Techniques

- DNA/RNA extraction using manual (Qiagen, QiaCube) and automated platforms (Biomek i5/i7, MagNA Pure, Cobas 4800)
- NGS library preparation and sequencing on Illumina (NovaSeq, MiSeq, NextSeq) and Ion Torrent (S5, S7) systems
- qPCR, Sanger sequencing, and electrophoresis (agarose gel, ABI 3500, Bioanalyzer)
- Nucleic acid quantitation using Qubit, Nanodrop, and spectrophotometry

Mass Spectrometry & Analytical Chemistry

- Experienced in spectrophotometry, ELISA/ELFA, ECL, and CLIA immunoassays
- LC-MS/MS method development on SCIEX ZenoTOF 7600+ for metabolite and bile-acid quantitation

Microbiology

- Bacterial culture and identification (aerobic/anaerobic, selective and differential media, API 20E)
- Microscopy and staining (Gram, acid-fast, methylene blue) for bacterial morphology assessment
- Antimicrobial susceptibility testing (disk diffusion, automated systems) and resistance pattern interpretation

Histology & Pathology

- Tissue fixation, embedding, sectioning, and H&E staining
- Grossing, microtomy, and cytology (Pap smear preparation and screening)
- Coordination with diagnostic pathology workflows

Hematology

- Peripheral smear preparation and staining, manual differential counts, and morphological evaluation
- Coagulation testing and body-fluid cell analysis using automated hematology analyzers

Data Management & Visualization Tools

- Microsoft Excel (advanced formulas, PivotTables, charting) and Access (database design and QC tracking)
- Adobe Illustrator for graphical abstracts and scientific figure preparation
- Windows and Linux operating systems for data analysis and documentation