

EXPERT WITNESS PROFILE

Hannah Wollenzien, PhD, FACMG

Board-Certified Clinical Laboratory Geneticist | Assistant Laboratory Director
Specialist in Molecular Diagnostics, Cancer Genomics, and NGS Assay Evaluation

Contact Information

Location: Sioux Falls, SD

Company: Karyon Genomic Strategies (Founder & Principal Consultant); Sanford Medical Genetics Laboratory (Clinical Laboratory Director)

Availability: Nationwide case review, consultation, and testimony (civil and criminal)

info@karyongenomicstrategies.com

701-389-0422

Professional Summary

Board-certified Clinical Laboratory Geneticist (ABMGG, Laboratory Genetics and Genomics) and Laboratory Director in a CLIA-certified medical genetics laboratory. Expert in identity testing, next-generation sequencing (NGS), cytogenetics, somatic tumor profiling, hereditary cancer testing, and molecular diagnostic assay development. Provides authoritative analysis of laboratory processes, test performance characteristics, variant interpretation, and genomic data reliability.

PhD-trained cancer genomics researcher with NIH-funded work on tumor evolution, intratumoral heterogeneity, and mechanisms of chemoresistance. Experienced in communicating complex genomic concepts clearly to non-scientific audiences and providing unbiased, evidence-based opinions.

Areas of Expertise

- **Molecular Diagnostic Assays:** detection limits, methodology limitations, contamination, workflow review
- **Case Review & Dispute Resolution:** interpretation discrepancies, lab error evaluation, method critique
- **Genomic Variant Interpretation:** ACMG/AMP guidelines, pathogenicity assessment, reporting standards
- **Hereditary Cancer Testing:** germline variant interpretation, incidental findings, risk assessment
- **Next-Generation Sequencing (NGS):** test validation, error sources, analytic sensitivity, QC metrics
- **Somatic Tumor Profiling:** mutation significance, biomarkers, therapy resistance mechanisms

- **Cytogenetics & Microarray Analysis:** chromosomal abnormalities, structural variants, ROH analysis
 - **Laboratory Quality & Compliance:** CLIA, CAP, standard-of-care laboratory practices
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Expert Witness Services

- Case review and written opinions
- Technical evaluation of genetic tests and laboratory workflows
- Assessment of variant classification and reporting decisions
- Explanation of genomic findings in clear, court-appropriate language
- Deposition and trial testimony
- Consultation for attorneys, insurers, and healthcare organizations

No prior testimony to date; available for plaintiff or defense.

Current Roles

Assistant Laboratory Director, Sanford Medical Genetics Laboratory

Clinical Assistant Professor, Internal Medicine, USD Sanford School of Medicine

Founder & Principal Consultant, Karyon Genomic Strategies

Board Certification

American Board of Medical Genetics and Genomics

Laboratory Genetics and Genomics (LGG), 2025

Education & Training

Fellowship – Clinical Laboratory Genetics & Genomics, Virginia Commonwealth University Health System

PhD – Basic Biomedical Sciences (Genetics/Molecular Biology), University of South Dakota

BA – Biology, Chemistry, Neuroscience, Concordia College

Selected Publications (*full list available upon request*)

- *Mutational Signatures in Solid Tumors*, Advances in Molecular Pathology, 2023
 - *Single-Cell Evolutionary Analysis Reveals Drivers of Plasticity and Chemoresistance in SCLC*, MCR, 2023
 - *Sox2 as an Oncogenic Driver of SCLC*, MCR, 2021
 - *Transcriptional Profiling During Neural Conversion*, Methods in Molecular Biology, 2021
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Professional Memberships

American College of Medical Genetics • Association for Molecular Pathology • Cancer Genomics Consortium • College of American Pathologists