

Laboratory Genetics and Genomics Fellowship Block Diagram

Fellow Year -1

Block	1	2	3	4	5	6	7	8	9	10	11	12
Institution	Site 1	Site 1	Site 1	Site 1	Site 1	Site 1	Site 1	Site 1	Site 1	Site 1	Site 1	Site 1
Rotation Name	Orientation	Cell culture/ harvest/ slides preparation	Karyotype Analysis (constitutional)	Karyotype Analysis (constitutional)	Karyotype Analysis (constitutional)	DNA extraction/ FMR1 fragment analysis/ RT-PCR/ array analysis	Methylation- PCR/Array Analysis (Constitutional)	Array Analysis (Cancer)/ FISH	Array Analysis (Cancer)/ FISH	FISH Analysis	FISH Analysis/ Karyotype (Oncology)	Targeted mutation analysis and oncology NGS panels
Lab Name	Cytogenetics	Cytogenetics	Cytogenetics	Cytogenetics	Cytogenetics	Molecular	Molecular	Cytogenetics	Cytogenetics	Cytogenetics	Cytogenetics	Molecular Diagnostics
% Lab	100	100	100	100	90	90	90	100	100	100	100	100
% Research	0	0	0	0	10	10	10	0	0	0	0	0

Fellow Year -2

Block	1	2	3	4	5	6	7	8	9	10	11	12
Institution	Site 1	Site 1	Site 1	Site 1	Site 1	Site 1	Site 1	Site 1	Site 1	Site 1	Site 1	Site 1
Rotation Name	Karyotype (Oncology)	MS-MLPA/ MLPA/ CFTR (Luminex)	Sanger Sequencing/ NGS	Sanger Sequencing/ NGS/ Array analysis (constitutional)	Sanger Sequencing/ NGS/ Array analysis (constitutional)	Prenatal specimen processing/ Karyotype analysis	Sanger Sequencing/ NGS/ Array analysis (constitutional)	cases review	cases review/ Compliance/ Quality assurance	cases review/ Laboratory supervision/ management and professionalism	Biochemical genetics rotation/ Molecular Pathology rotation	cases review/ Laboratory supervision/ management and Professionalism
Lab Name	Cytogenetics	Molecular	Molecular	Molecular	Molecular	Cytogenetics	Molecular	Molecular/ Cytogenetics	Molecular/ Cytogenetics	Molecular/ Cytogenetics	Biochemical Genetics/ Molecular Diagnostics	Cytogenetics / Molecular
% Lab	100	100	100	100	100	100	100	100	100	100	100	100
% Research	0	0	0	0	0	0	0	0	0	0	0	0

Rotation Key

Orientation in Fellow Year-1 consists of Cytogenetics and Molecular Introduction to laboratory protocols, laboratory safety and laboratory didactic

Specimen requirement / processing, cell culture, and cell harvest

Vacation=22 vacation days may be taken throughout each year.

DNA Extraction=The extraction of deoxyribonucleic acid

FMR1 Fragment Analysis=Fragile X Messenger Ribonucleoprotein 1

RT-PCR=Real-Time-Polymerase Chain Reaction

Methylation-PCR (MSP)=Methylation-Polymerase Chain Reaction

FISH=Fluorescence in situ hybridization

NGS panels=Next-Generation Sequencing

MS-MLPA=Methylation-Specific-Multiple Ligation-Dependent Probe Amplification

MLPA=Multiple Ligation-Dependent Probe Amplification

CFTR=Cystic Fibrosis Transmembrane conductance Regulator

Sanger Sequencing=also known as the "chain termination method", is a method for determining the nucleotide sequence of DNA

Clinical Outpatient Observation=During the 1st year, the fellow will spend 10 half days with a variety of Medical Genetics & Genomics Faculty