

PEDS-727: HUMAN CYTOGENETICS

Elective Director:	Warren Sanger, Ph.D. (wgsanger@unmc.edu)
Participating Faculty:	
Location:	Human Genetics Office, MMI HBM 2076
Offered:	Monthly
Max. # Students/Period:	1

Course Objective**Material Covered:**

Familiarize students with laboratory techniques in Human Cytogenetics

Skills Acquired:

The student will gain knowledge and experience in techniques and applications of sex chromatin preparations, short-term and long-term tissue cultures, chromosome preparation and karyotype analysis.

Activities of Elective

Number of New Patients/Student/Week:	150
Responsibilities of Student for Period:	Review interpretations with Director

Does history/physical:	No
Who critiques:	
Follows patients, with notes as needed:	No
Who supervises:	
Does student see ambulatory patients:	No

Procedures	Observe	Perform
Cytogenetics & Genetic Diagnostic Procedures	300/week	0

Scheduled Activities of Student:

Rounds (Clinic)	0 hrs/wk	Research Project	40 hrs/wk
Didactic Conferences	3 hrs/wk	Independent Patient Care	0 hrs/wk
Independent Learning	0 hrs/wk		

Describe Optional Rounds and Activities (if any):

Attend weekly planning meeting: Clinical Staff meetings (Mondays) & Case Conference

Other Required Activities:

Reading/review of current literature:	Yes
Writing a paper	No
Presenting a case report	Yes

Evaluation:

How the student is evaluated:	Based on lab performance: Yes
Who evaluates the student: Director	Attending: Yes

Unique Features of this Elective:

This rotation will allow students to:

- o Understand the types of banding techniques and their relevance to specific situations.
- o Become familiar with sterile techniques and handling tissues for cell culture and cytogenetic studies.
- o Be able to recognize indications which have a high yield of being associated with a chromosome abnormality.
- o Understand etiologies relevant to birth defects.
- o Learn the specific handling needs and reasons for following a specific protocol for processing tissues for cytogenetic studies.
- o Understand the differences between hereditary and nonhereditary chromosome abnormalities.
- o Become familiar with types of chromosome changes associated with specific malignancies.
- o Understand the various modes of inheritance and recurrence risks.
- o Be able to correlate clinical findings with specific genetic syndromes.
- o Become familiar with basic practical and technical aspects of molecular cytogenetics.
- o Understand when *in situ* hybridization techniques should be utilized.
- o Become familiar with automated karyotyping system (Cytoscan)
- o Become familiar with molecular diagnostic approaches.

