

# Week #3

**"IL-7 Receptor Mutations and Steroid Resistance in Pediatric T cell Acute Lymphoblastic Leukemia: A Genome Sequencing Study"**



# Pediatric Oncology

- **Treat and diagnose various types of cancer in children (until age of 20), may specialize in hematology (study of blood disorders)**
- **Education:**
  - **4 years of medical school**
  - **1-2 years general pediatric residency**
  - **3 years of child oncology fellowship**
- **Current research topics:**
  - **Development of more drugs to treat cancer**
  - **Decrease radiation exposure during chemotherapy**
  - **Improved palliative care**

# A Closer Look

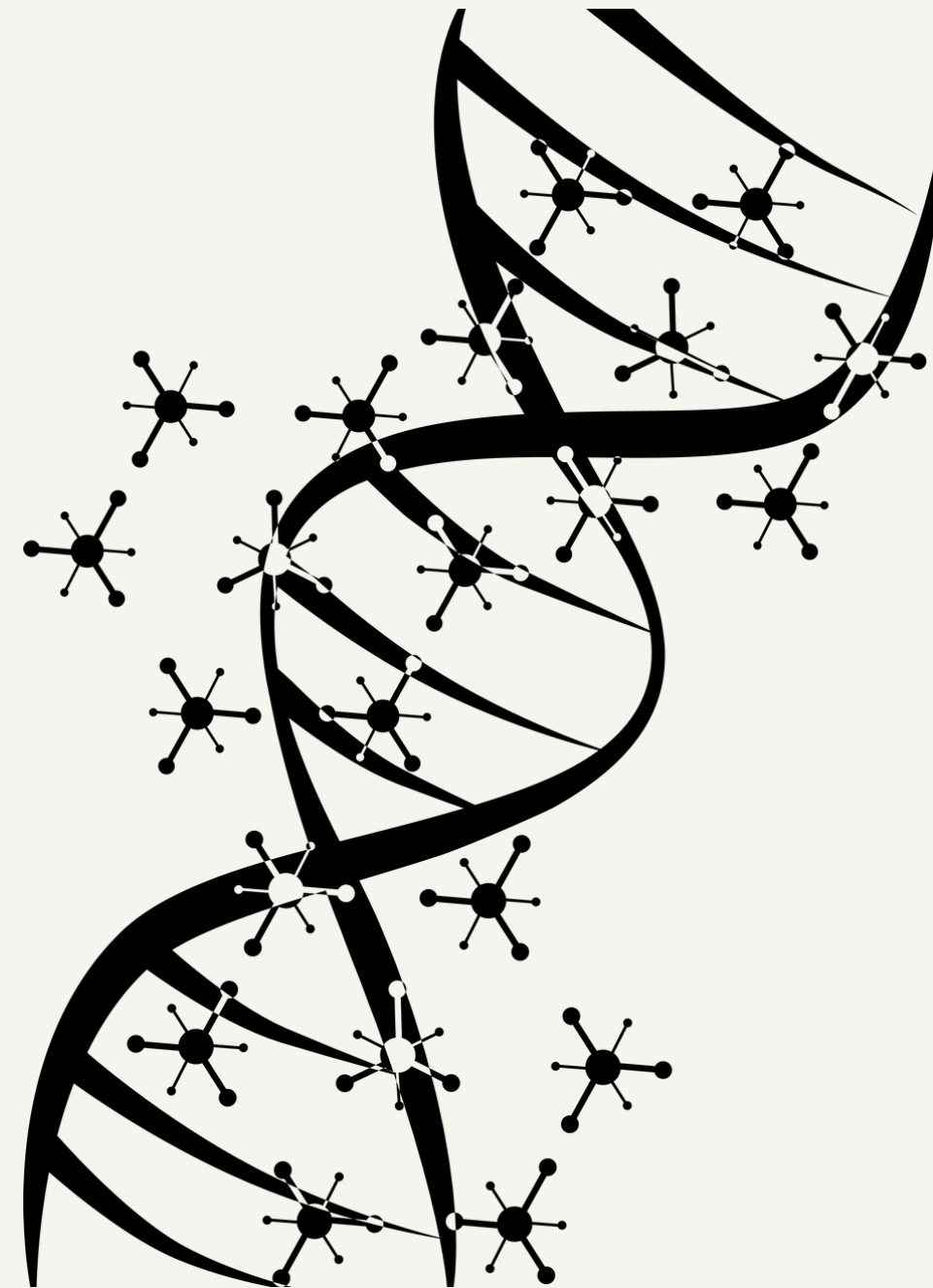


# Genome-Wide Association Study

- **Is an "analysis comparing the allele frequencies of all available...polymorphic markers in unrelated patients with a specific symptom or disease condition..."**
  - <https://research.library.gsu.edu/c.php?g=115595&p=755213>
- **Pairs pre-treatment and post-treatment leukemia patients using matched pairs design**
  - **Uses sequencing to detect structural differences and presence of proto-oncogenes**

# Key Words & Concepts

- **Cytokine signaling**
- **Transcriptional regulation**
- **Cell death**
- **Cell cycle**
- **Chromatin modification**
- **Cellular transport**
- **Mutations**
- **Steroids**
- **Acute lymphoblastic leukemia**



Thank You!

