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My research interests relate to the genetics of childhood cancer. My group has focused specifically on the childhood embryonal liver tumor, hepatoblastoma. In conjunction with the Children's Oncology Group, we are studying copy number changes in hepatoblastoma tumors using oligonucleotide array-based comparative genomic hybridization (oaCGH) and correlating acquired changes with tumor behavior and outcome. We are also studying a family of complex chromosomal translocations involving proximal 1q. We are also interested in genetically defining the transitional liver tumor of childhood, which shares features of both hepatoblastoma and hepatocellular carcinoma.

Recently we have initiated population studies in genetic risk factors for leukemia specific to Mexican-American children in South Texas. We have initiated a genetic epidemiological registry and are assembling genomic DNAs along with demographic and clinical data from children with cancer. We hope to develop this research infrastructure into projects studying alterations and variations in multiple genes and pathways that contribute not only to childhood cancer predisposition but also to outcome, co-morbidities and late effects of cancer treatment.

In addition to the study of childhood tumors, I have a long-standing interest in familial breast/ovarian cancer. We have been involved in the NCI-sponsored Cancer Genetics Network since its inception in 1999. We have recently initiated a hereditary cancer clinical program in conjunction with both the Cancer Therapy and Research Center at UTHCSA and also CHRISTUS Santa Rosa Children's Hospital. Each patient for genetic risk assessment is provided with the opportunity to participate in genetic research studies, which will further expand our research infrastructure.

<p>QuickTime™ and a TIFF (Uncompressed) decompressor are needed to see this picture.</p>	<p>QuickTime™ and a TIFF (Uncompressed) decompressor are needed to see this picture.</p>
<p>Figure 1. Whole genome oaCGH of hepatoblastoma tumor DNA demonstrating gains of whole chromosomes 8 and 20 as well as narrow region of amplification on chromosome 21.</p>	<p>Figure 2. Expanded display of oaCGH plot demonstrating small region of amplification at chromosome 2q24.</p>

Tomlinson GE, Douglass EC, Pollock BH, Finegold MJ, Schneider NR. 2005 Cytogenetic analysis of a large series of hepatoblastoma: numerical aberrations with recurring translocations involving 1q12-21. *Genes, Chromosomes and Cancer*. 44: 177-84.

Trobaugh-Lotrario AD, Tomlinson GE, Finegold MJ, Gore L, Feusner JH. 2009. Small cell undifferentiated variant of hepatoblastoma: adverse molecular and clinical features similar to rhabdoid tumors, *Pediatric Blood and Cancer*, 52: 328-34.