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JANE COFFIN CHILDS-MERCK FELLOW

Dr. Wesley Saintilnord is interested in how transposable elements (TEs), DNA sequences that can move from one location in a genome to another, can exploit epigenetic pathways that then lead to their aberrant reactivation in cancer cells to rewire gene expression programs. In his fellowship, Saintilnord will examine how TEs functionally contribute to cancer progression.

Saintilnord developed his expertise in epigenetic mechanisms during his Ph.D. research at the University of Kentucky in [Dr. Yvonne Fondufe-Mittendorf's lab](#) now at the Van Andel Institute. In his first project, Saintilnord showed that [cadmium exposure changes how many genes are turned on during sperm development](#) by affecting DNA methylation. In another study, he found that [certain cancer-associated variants of a histone protein make DNA wrap more tightly](#), changing how genes are expressed. Collectively, his research demonstrates how environmental exposure, and oncogenic mutations rewire gene expression through epigenetic pathways.

Now, in [Dr. Ting Wang's lab at Washington University in St. Louis](#), he will dissect why cancer cells take control of TEs for gene regulation and how TE-generated transcripts drive tumorigenesis. He will develop a high-throughput screen to evaluate tumor-enriched TE transcripts in classical cancer phenotypes. Then, Saintilnord will evaluate which of these transcripts encode functional proteins that modulate cell signaling and chromatin dynamics. Saintilnord's studies will provide fundamental insights into TE biology in cancer cells and may reveal novel therapeutic strategies to combat TE-mediated oncogenic programs.

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