

DR. MELINDA VARNEY



Dr. Melinda Varney, Ph.D., a former WV-INBRE summer intern, is currently a postdoctoral research fellow at Cincinnati Children's Hospital Medical Center (CCHMC). Located in Cincinnati, OH. She is receiving her postdoctoral training in the laboratory of Dr. Daniel Starczynowski, Ph.D. in the department of Experimental Hematology, where she studies innate immune signaling in blood malignancies.

While interning with the WV-INBRE program in 2004, she worked under the mentorship of Dr. Hongwei Yu, Ph.D. at Marshall University, learning aspects of microbiology, immunology, and molecular genetics. After acquiring her B.S. in Biology at West Liberty University, she completed her graduate education at Marshall University under the mentorship of Dr. Vincent Sollars, Ph.D., receiving her Ph.D. in Biomedical Sciences with emphasis in Cancer Biology. Her dissertation work involved the study of hematopoiesis and how it may go awry, leading to blood malignancies such as acute myeloid leukemia (AML). Her work included the use of various genetic mouse strains and bioinformatics in the study of stem and progenitor cell biology, narrowing genomic regions important to the process of hematopoiesis. Additionally while in Dr. Sollars' laboratory, she performed work in the field of Cancer Epigenetics, as well as work in the field of Environmental Carcinogenesis, more specifically concerning how fat content in the diet can alter hematopoietic stem and progenitor cell frequency.

Dr. Varney's current work combines her interests in microbiology, immunology, and genetics with her principal area of interest in the field of Cancer Biology, which is the development of blood malignancies. She has characterized a novel knock out mouse model for a gene that she hypothesizes acts as a tumor suppressor in the context of regulating innate immune signaling. The expression of this gene is downregulated in a specific subset of blood malignancies called del(5q) myelodysplastic syndromes (MDS). MDS may progress to AML or bone marrow failure (BMF). Her current work has much relevancy to understanding some of the root causes of the clinical manifestations of MDS.

Additionally, while acquiring her postdoctoral training, she has designed and implemented course curriculum at the University of Cincinnati, under the direction of Dr. Anil Menon, Ph.D., to effectively teach a Cancer Genetics module to undergraduate and graduate students in the course of Fundamentals of Molecular Genetics. She also serves as adjunct faculty at Cincinnati State Technical and Community College as a course instructor of Microbiology. Dr. Varney states "Those early experiences as a summer intern helped a great deal in my path to where I am today. I will always be grateful for them."