



## Office of Faculty Development

### Pathology & Immunology

#### **Eric Duncavage, MD**



grew up in Nashville, Tennessee where his father was the Vice Chairman and founding member of the department of Otolaryngology at Vanderbilt University and his mother was a social worker. Eric enjoyed outdoor activities and frequently hiked, camped, and paddled with friends throughout Tennessee. He was very interested in computers and the early internet and created several websites in the early 1990s including a travel blog and an online scavenger hunt. While in high school he annoyed his parents by stringing networking cables through the house so he and his brothers could play LAN games and share an ISDN connection.

Dr. Duncavage attended Vanderbilt University majoring in physics and chemistry and was an instructor in the student-run wilderness skills program for several years. After finishing college, he worked briefly on the PHENIX project using the relativistic heavy ion collider at Brookhaven National Laboratory. He then joined the laboratory of Drs. David Threadgill and Bob Coffee at Vanderbilt and helped build and validate one of the first robotic microarray instruments using plans published by Pat Brown at Stanford University (now the CEO of Impossible Foods). Dr. Duncavage attended the University of Tennessee College of Medicine where he continued research in cDNA microarray technology at the Hartwell Center for Biotechnology at St. Children's Research Hospital. He was awarded a Howard Hughes Medical Institute pre-doctoral fellowship to study in the laboratory of Dr. Chuck Sherr and spent a year studying chemotherapy response in mouse models of lymphoma and the *ARF-MDM2-TP53* pathway.

During medical school Dr. Duncavage became interested in pathology and especially the relatively new field of molecular pathology. He joined the AP/CP residency program at Washington University and worked extensively with Drs. John Pfeifer and Barb Zhenbauer (then the director of the MDL lab) to learn more about molecular pathology. His early research work with John Pfeifer was focused on the biology of Merkel cell carcinoma, a rare skin tumor that had recently been shown to harbor a novel polyoma virus. As the first molecular genetic pathology fellow at WU, Eric very rapidly became interested in next generation sequencing technologies and the pioneering work being done by Tim Ley and others to sequence the first cancer genome (AML-1), and eventually joined the laboratory of Dr. Matt Walter to study myelodysplastic syndromes (MDS). Working with the Genome Institute (now the McDonnell Genome Institute, MGI), Dr. Duncavage created one of the earliest capture-based enrichment methods for next generation sequencing and used it to characterize viral integration sites from formalin-fixed tissue.

As a hematopathology fellow and faculty member at ARUP Labs and the University of Utah, Dr. Duncavage was mentored by Drs. Sherrie Perkins (now CEO of ARUP Labs) and Carl Kjellberg. Eric continued his interest in sequencing based-diagnostics and published one of the first papers to show that targeted sequencing could be used to identify the full spectrum of mutations in hematologic malignancies including translocations and large indels. He returned to WU in 2011 and helped establish the Genomics and Pathology Service (GPS) which was the first academic laboratory to offer CAP/CLIA-accredited next generation sequencing-based cancer panel diagnostics. Since then, he has developed several molecular diagnostics assays in collaboration with Dr. David Spencer (Medical Director of the MGI clinical laboratory) including MyeloSeq for sensitive detection of mutations in myeloid malignancies and the WGS-based ChromoSeq assay.

Outside of work Eric continues to enjoy outdoor activities including camping, hiking, skiing, with his wife, Haley (faculty in the department of Medicine) and two daughters Ellen (12) and Lucy (7) who are in Wydown Middle School and Glenridge Elementary school. They enjoy traveling and visiting family.

