

Dr. Matlock Jeffries received his MD degree in 2010 from the University of Oklahoma, and subsequently completed his Residency in Internal Medicine in 2013 with a subsequent year as a peer-selected Chief Resident in 2014. He went on to finish Fellowship training in Rheumatology in 2016 and then joined faculty at the University of Oklahoma. He is dual board certified in Internal Medicine and Rheumatology, and his clinical work focuses on the early recognition and treatment both osteoarthritis and rheumatoid arthritis.

He has pursued basic science and translational research extensively since 2005; his research mentors have included Dr. Amr Sawalha MD, autoimmunity epigenetics specialist and Dr. Judith James MD PhD, autoimmunity and genetics expert. His research focuses on the contributions of epigenomic alterations to rheumatic disease, particularly regarding epigenetic patterns that may underlie the development and progression of osteoarthritis (OA), the most common age-related musculoskeletal disease worldwide. In 2014, he published one of the first genome-wide DNA methylation studies of OA cartilage, and subsequently published the first such study of OA subchondral bone. His laboratory combines a large range of molecular techniques to examine both epigenetic changes in a diverse set of tissues as well as the transcriptional and functional consequences of these changes.

His laboratory has recently begun examining the influence of aging on immune cell epigenetic dysregulation in OA and its use as a potential biomarker of disease, and is recruiting a large, longitudinal knee OA patient cohort for this purpose. His future interests lie in describing and comparing the epigenome mouse models of OA to unravel the contributions of various OA risk factors (i.e. obesity, aging, trauma, etc.) with a goal of creating a world-class OA epigenetics research program to address unmet clinical needs.