Chieh-Yu Lin, MD, PhD

Outstanding Paper of the Year

Dr. Chieh-Yu Lin, MD, PhD Assistant Professor of Pathology & Immunology in the Division of Anatomical and Molecular Pathology, is honored for her outstanding paper of the year: “SARS-CoV-2 Infects Human Engineered Heart Tissue and Models COVID-19 Myocarditis” published in JACC: Basic to Transitional Science.

Dr. Lin has made many contributions to the scientific literature. This recent and timely contribution has been of particular importance with regards to SARS-CoV-2/COVID-19 research.

She collaborated as a co-senior author with other departments within Washington University in St. Louis, as well as with other researchers from other institutions to show that SARS-CoV-2 directly infects cardiomyocytes rather than inflammatory cells, fibroblasts, or endothelial cells. This paper showed that the virus infected cardiomyocytes through the ACE2 and endosomal cysteine protease dependent pathway. The infected myocytes undergo reduced contractility through sarcomere breakdown leading to cardiomyocyte cell death. In addition, the histologic pattern was characterized as a myeloid-rich inflammatory infiltrate. This characterization helps to bridge the basic science findings to clinical practice as it provides a salient learning point for practicing pathologists to be able to recognize this entity.