

Abstract Submitted  
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**Highlighting Coronary Vasculature of Perfusion-fixed Hearts using Magnetic Resonance Imaging** JASON KELLY, Austin Peay State University — Magnetic resonance imaging, or MRI, of perfusion-fixed hearts is highly effective at obtaining high quality images of soft tissue and fat. Computed tomography, or CT, scans are preferred for imaging vasculature of the perfusion-fixed hearts. CT scans, however, have a much lower resolution than MRI, which can show details as small as 0.1mm. Gadolinium-based contrast agents can be used in MRI to brighten images at the location of delivery. A method for obtaining a model of both the tissue and vasculature of ex-situ perfusion-fixed human hearts using a single imaging method, MRI, is needed. Balloon catheters were inserted into the coronary sinus and coronary arteries to fill the vasculature with various solutions. The gadolinium-based contrast resulted in an image that fluoresced well, but the contrast leaked from the vasculature into the tissue, thus the delivery method needed to be improved. After the vasculature was properly occluded, solutions including fish oil, graphite microspheres, and mineral oil were explored with varying success. More agents are being explored in an attempt to optimize the imaging of coronary vasculature, myocardium, and adipose tissue using a single imaging modality.

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