PROJECT TITLE: Development of an effective catheter-directed therapeutic strategy to treat acute deep vein thrombosis

Physical Requirement: Must be able to work in person in the UC Cardiovascular Research Center

Project's Technical Skills Requirement: Matlab, instrument control, data acquisition skills, and enthusiasm for experimental research

Project's Available Positions: Student research assistant

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Project Description

This pilot project entails a meaningful partnership and collaboration between the University of Cincinnati, Boston Scientific, Inc., and Lantheus Medical Imaging. In our ongoing studies, we have demonstrated that pulsed ultrasound accelerates clot dissolution in vitro and in a porcine clot model in vivo, and that sustained cavitation is correlated with enhancement of thrombolytic efficacy. Our overall goal is to harness the physical mechanisms underlying clot dissolution with ultrasound and to extend our investigations with a lytic and a commercial echo contrast agent, Definity®, to the EKOS™ endovascular system in an in vitro flow model of deep vein thrombosis, DVT. Successful completion of these studies will provide new information for the development of an effective catheter directed therapeutic strategy to treat acute. Our long-term objective is to identify an effective rt-PA and Definity® infusion protocol combined with acoustic activation with the EKOS™ endovascular system to promote rapid restoration of flow in the deep veins.