

CPS: Medium: Collaborative Research: Wireless Magnetic Millibot Blood Clot Removal and Navigation in 3-D Printed Patient-Specific Phantoms using Echocardiography

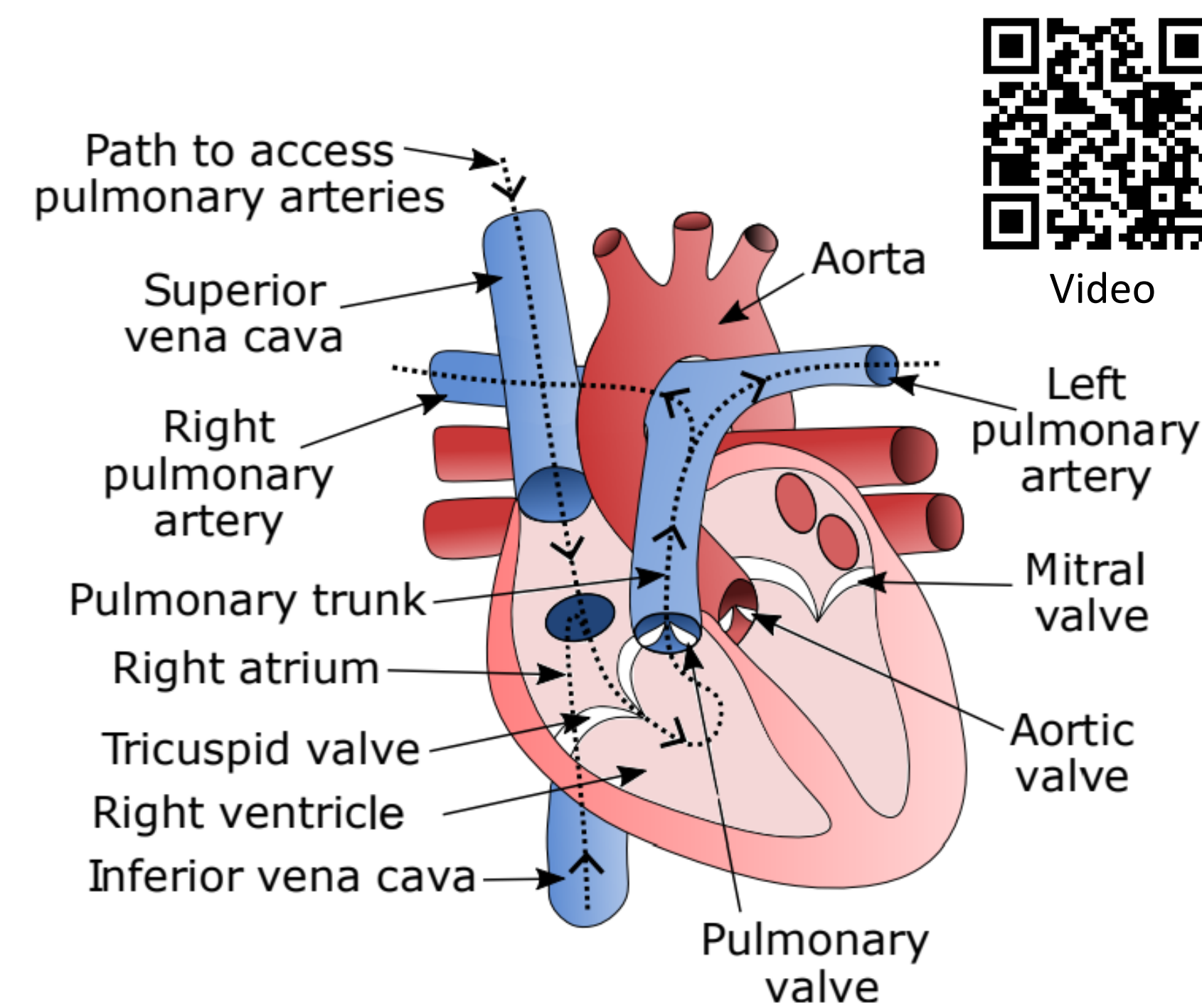
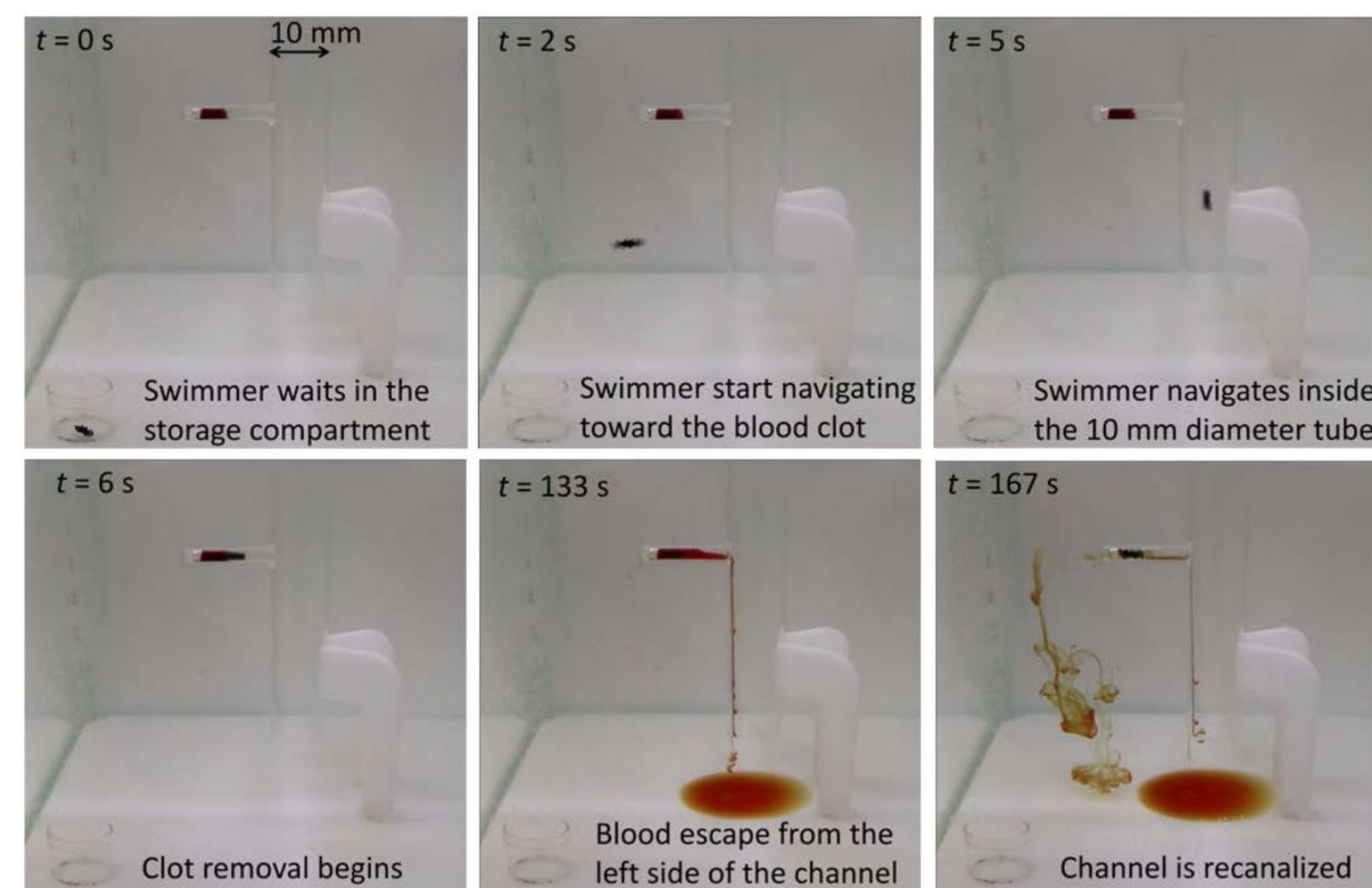
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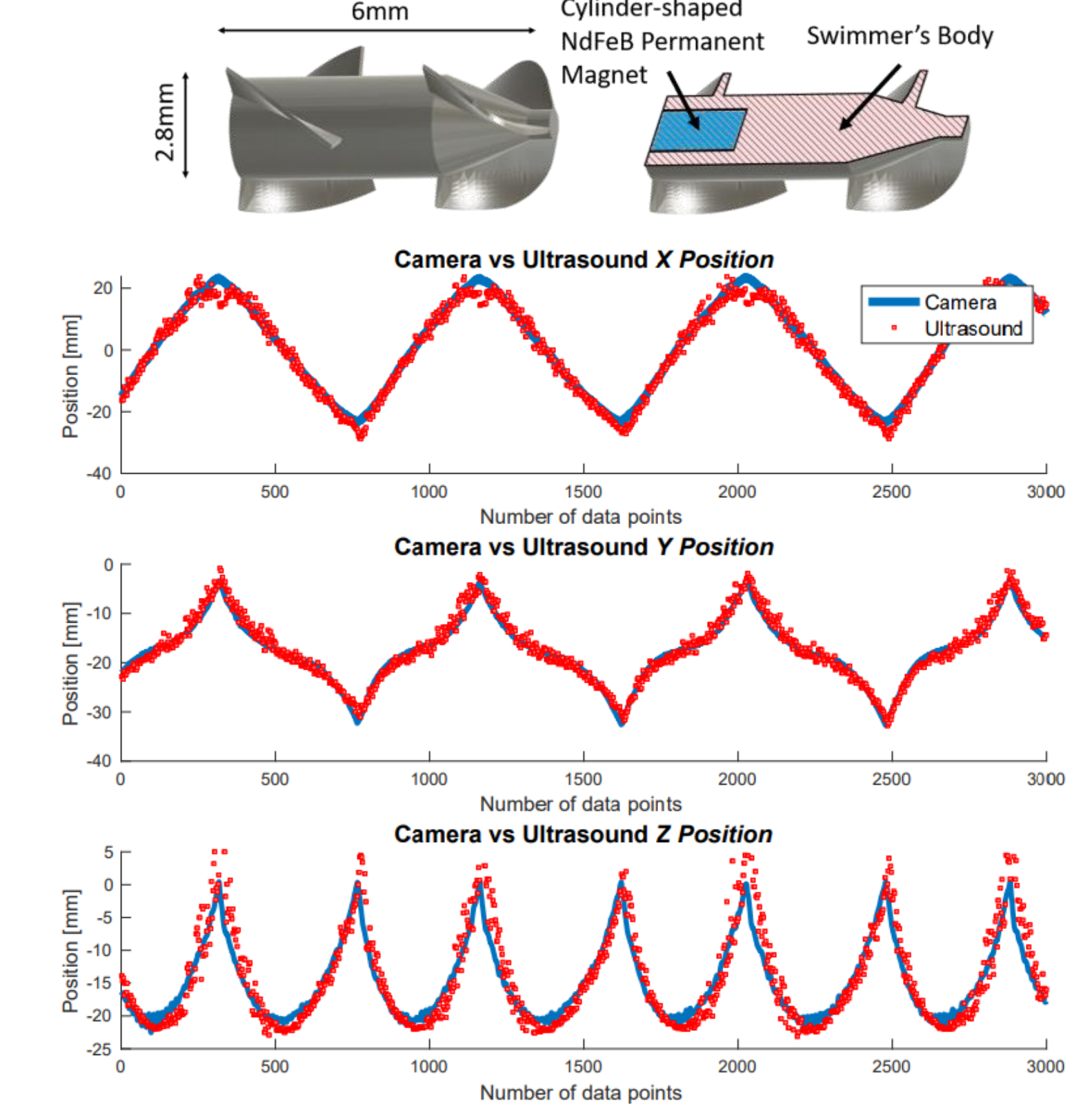
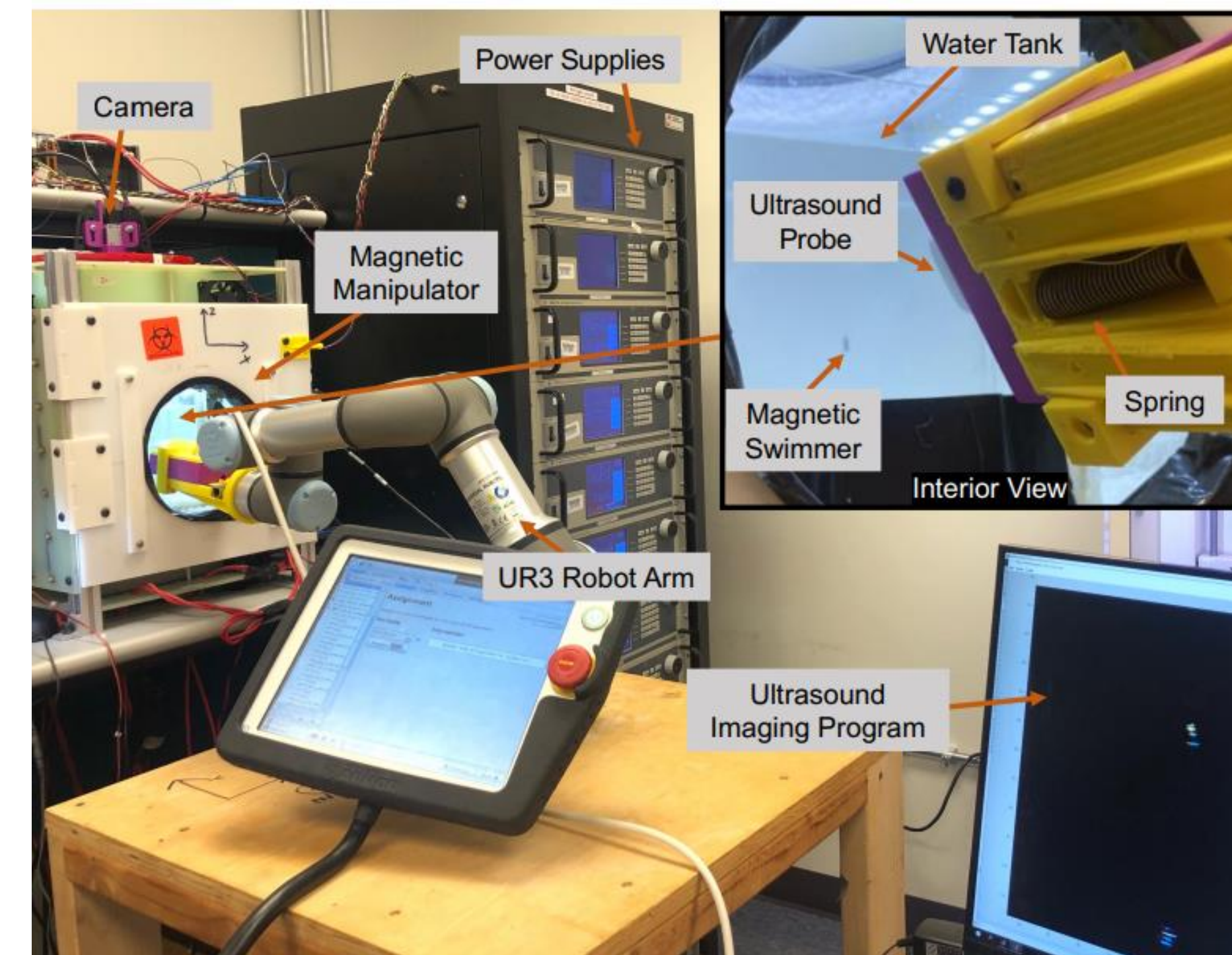


Dr. Julien Leclerc

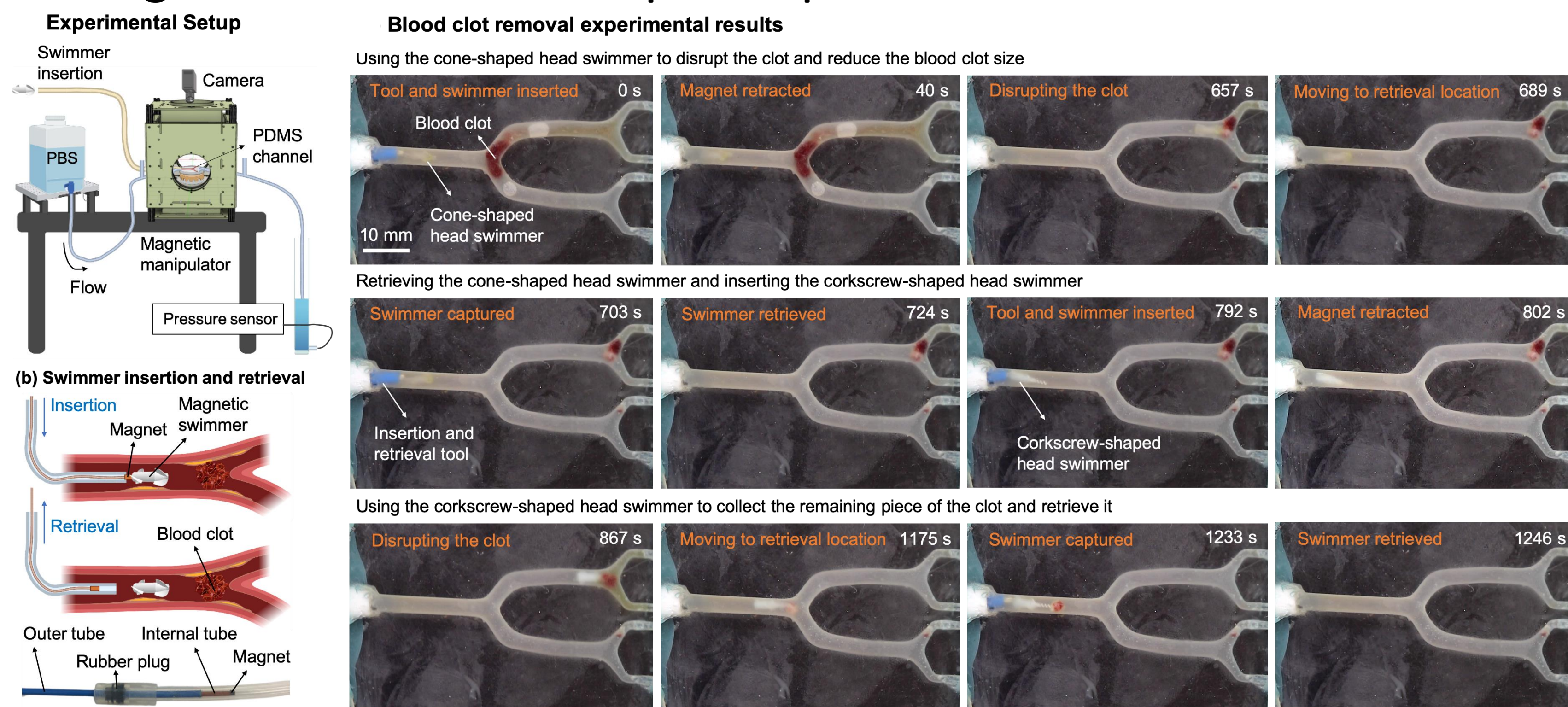
Every year, approximately 85,000 people die from a pulmonary embolism. Current methods to treat embolisms encounter substantial challenges. This project studies using tetherless magnetic swimmers to address these limitations and improve patient's outcomes.



Recent results: Our research group demonstrated the 3D control of a miniature swimmer using 2D ultrasonography for position feedback. This work will be presented at the ICRA 2024 conference.



Motivations: Magnetic swimmers contain magnetic material and propeller fins. They are actuated by an external magnetic field. Navigating tetherless agents within the human body instead of inserting catheters could improve patient outcomes.



Our lab frequently conducts hands-on K-12 outreaches. We created outreach activities related to the actuation and control of magnetic robots. One of our outreach activities was selected by NSF to make an activity sheet be used in future outreach events.

