

Winners of the highly competitive
SBIR PHASE II Awards



Interactive Flow Studies is dedicated to support and enhance learning through the use of state of the art technology.

Interactive Flow Experiment and FLOWEX™ software are used as tutors and they serve to increase basic skills and knowledge of hemodynamics

Interactive educational PIV, CFD & CAD technologies are used as tools that can be applied to a variety of goals in the learning process and can serve as a resource to help develop higher order thinking, creativity and research skills.



Interactive Hemodynamics Visualization & Analysis System

An interactive experimental study of hemodynamics using state of the art technologies. Explore the highly visual nature of fluid flow using many standard or custom blood vessel models and heart valves interactively and safely with Patented Interactive Experiment and user friendly FLOWEX™ software which integrates Educational Computer Aided Design (CAD), Computational Fluid Dynamics (CFD), and Particle Image Velocimetry (PIV).



Interactive Flow Studies
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HEMOFLOW



**Teach
21st Century
Knowledge & Skills**

Interactive Flow Studies
Technology In Science Education & Research

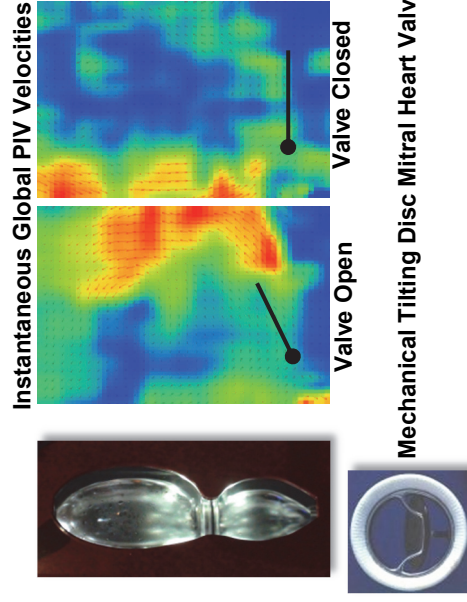
FEATURES

- ☐ See recirculation zones, stagnation zones and separation points.
- ☐ See and quantify changes in velocity vector magnitudes.
- ☐ Utilize velocity profile data to quantify shear stresses.
- ☐ See effects of constriction on inlet and outlet pressures.
- ☐ Control the flow rate.
- ☐ Have steady and unsteady flow rates with the associated ability to vary the unsteady pulse rate.
- ☐ Compare normal vessel to stenosed vessel.
- ☐ Comes with FLOWEX™ Software.
- ☐ Digital Flow Rate & Pressure Measurement.
- ☐ Integrated miniPIV system with digital camera for PIV flow visualization and analysis.
- ☐ Optional miniLDV system to measure turbulence and shear.
- ☐ Interchangeable blood model phantoms.
- ☐ Interchangeable real heart valves. Comes with clinically used non-sterile mechanical heart valve.
- ☐ Variable pulse rate from 60bpm to 100bpm.
- ☐ User can design custom blood model phantoms.
- ☐ Interactive & highly visual.
- ☐ Portable. Take it into any classroom.
- ☐ Easy to use and set up.

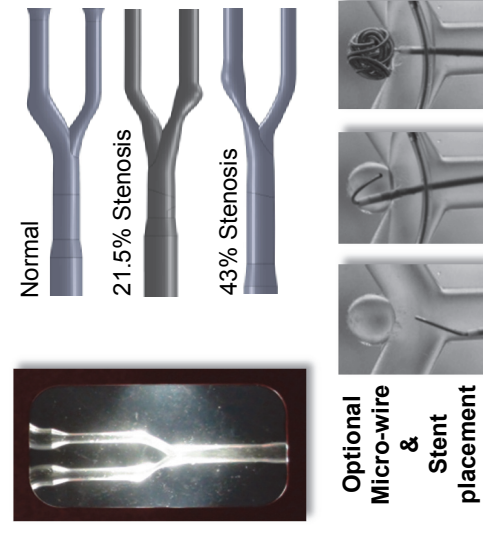
STANDARD MODELS

- ☐ Three blood vessel phantoms, based on real patient data demonstrating various degrees of stenosis, come with the system.
- ☐ A mitral mechanical tilting disc heart valve comes as standard.

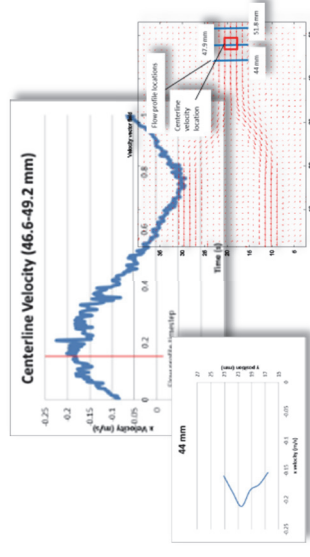
Heart Chamber



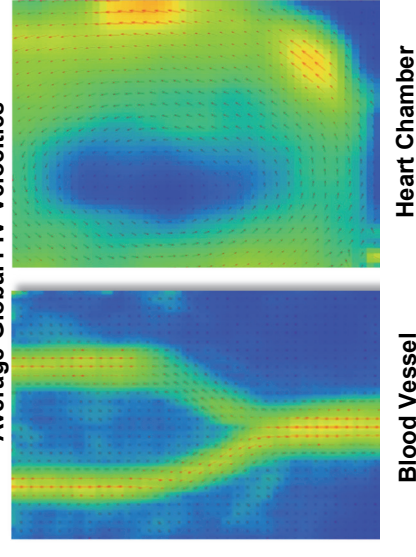
Blood Vessel



- ☐ Integrated PIV & CFD analysis
- ☐ Integrated CAD for CFD models
- ☐ Web based
- ☐ Export results
- ☐ Fully interactive
- ☐ No setup required
- ☐ Works with all PCs
- ☐ Flow theory explanations
- ☐ Capture flow video and images
- ☐ Multiple PC capable for Team Study



Average Global PIV Velocities



See a Demo of FLOWEX™ at
www.interactiveflows.com