

# VASCULAR FLUID DYNAMICS

## Vascular flows

Our research is centered on the analysis of blood flows and developing tools to assist us in this analysis. We work in the areas of stenosis, stents, dialysis, cardiology and fetal medicine.

## Computational fluid dynamics

CFD model of the fluid dynamics through an arterial stenosis, using a high resolution LES model.

## Ultrasound

We have developed new techniques in ultrasound imaging and analysis, and new clinical tools for diagnosis

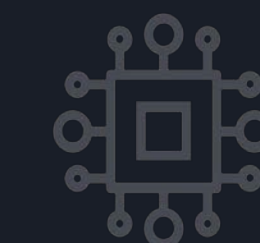
## Laboratory

The latest fluid dynamics research facilities, including Laser Doppler Anemometry (3D) and stereo and tomographic Particle Imaging Velocimetry systems.

## Microfluidics

Microfluidics design, analysis and fabrication capability. Proven designs for medical research.

## Translatable health research



## Flow visualization

Laser sheet flow visualization of the fluid dynamics of an arterial stenosis, allowing the complexity of the flow to be seen and measured.



## Data analysis

Working with our hospital-based colleagues, we have access to large patient datasets to ensure real world relevance of our research.



## Clinical

Our team works closely with hospital and industry collaborators. Our research is driven by clinical problems.



## 3D printing

In-house 3D printing facilities, used for our research. Patient education, pre-surgery planning and benchtop simulation.



## Tracie Barber

Tracie Barber leads the vascular fluid dynamics group, with over 250 publications and 20 years of fluid dynamics research experience.

email: [t.barber@unsw.edu.au](mailto:t.barber@unsw.edu.au)

<https://www.vfdunsw.com/>