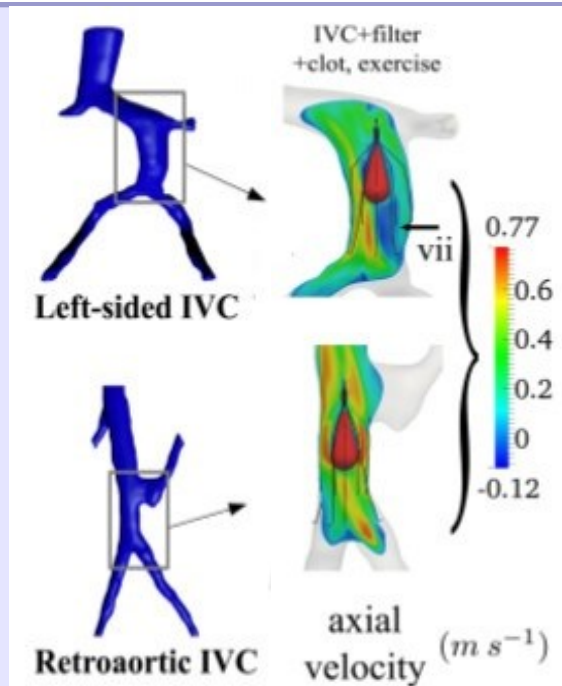


# Computational Medicine & Image Processing

## Research:

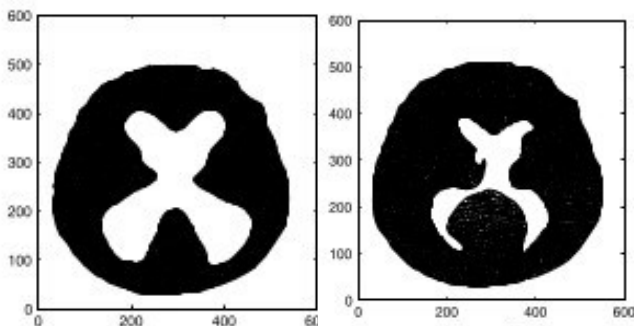
- Computer simulation of patient-specific selection of inferior vena cava filter for improved prevention of pulmonary embolism
- Computer simulation of progression and treatment of hydrocephalus
- Image processing algorithms for improved placement of pacemaker leads
- Computer simulation of the beating heart



Patient-Specific Selection of Inferior Vena Cava Filter

## Equipment:

- High performance computing cluster at Advanced Computing Facility
- Multiple unix computers
- Amira image processing software



Computer simulation of hydrocephalus treatment

## Collaborating Faculty:

**IVC Filter Studies:** F.C. Lynch (PSU Med); K.B. Manning (PSU and PSU Med); B.A. Craven (PSU ARL); R.L. Campbell (PSU ARL).

**Hydrocephalus Simulations:** C.S. Drapaca (PSU)

**Image Processing for Pacemaker Implantation:** J.N. Oshinski (Emory Med)

**Beating Heart Simulation:** S.A. Vavasis (Waterloo)



### Director:

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- Computational medicine
- Computational simulation of patient treatment via surgery or medical device
- Computational biomechanics
- Patient-specific model and mesh generation
- Image processing

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