Application Area: Biomechanical Simulation/Analysis

- Relationships: images, geometry, mechanics
  - Tools for integrating these analyses
- Patient specific vs population models for biomechanical simulation
- Biomechanics <-> shape spaces
- Shape/biomechanics vs pathology
DBP Anderson/Weiss

• Weiss (Bioeng) & Anderson (Orthopedics)
  o Pathoanatomy of the hip
  o Displasia, impingment

• Analysis of hip population data with ShapeWorks
  o J. of Orthopedics Research, 2013

• R01 funding (PI: Anderson)
  o Join biomechanical analysis and shape
Possible DBP: Allison Marsden

- UCSD, Assoc Prof, MAE
- Research
  - Cardiovascular fluid mechanics
  - Shape optimization for complex flows
- Possible applications
  - Segmentation/meshing
  - Shape analysis
  - Visualization of scalar/vector data
- Funding: NSF/NIH
- Status
  - Meeting, visit, exchange of data
Possible DBP: Kent Bachus

• U. of Utah, Research Professor, Dept of Orthopedics
• Research: biomechanics of prosthetic implants, prosthetic design and analysis of performance
  Funding: VA, US Army
• Status: meetings, discussions, student who is experimenting with tools