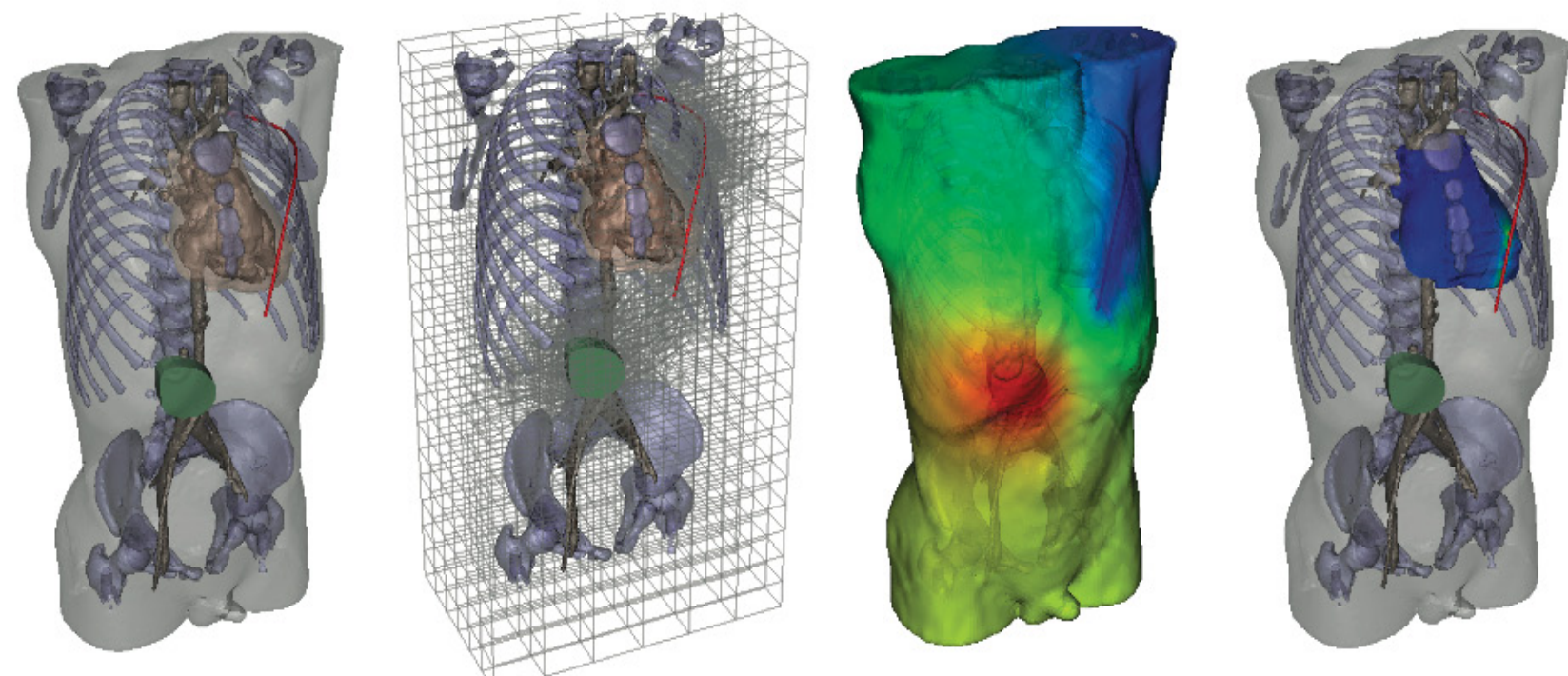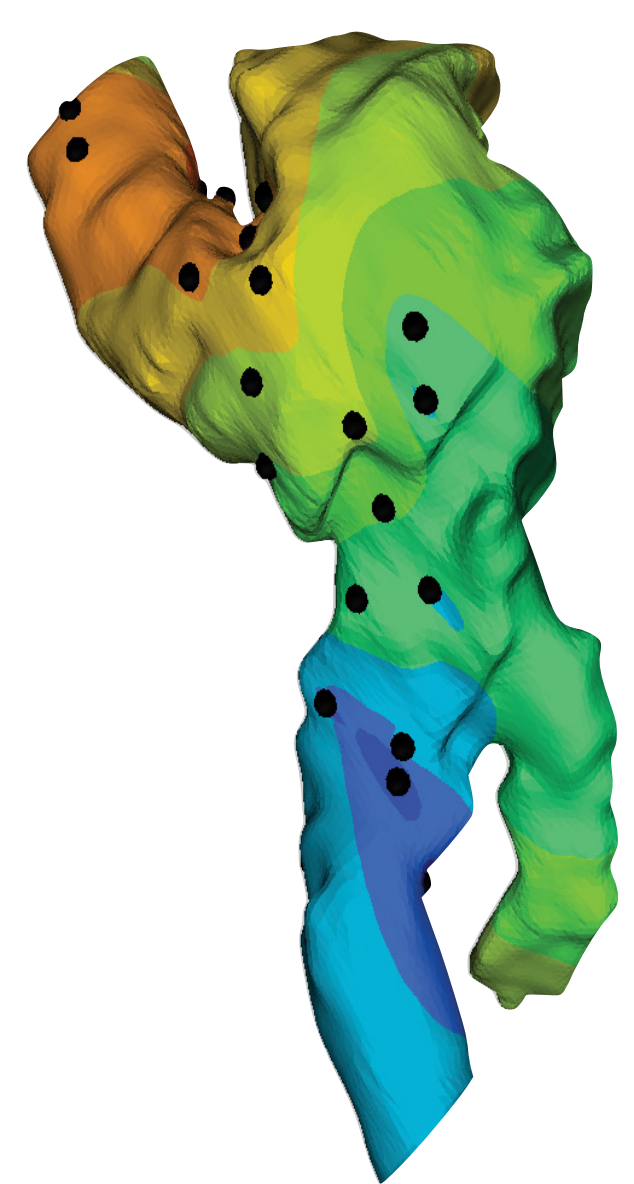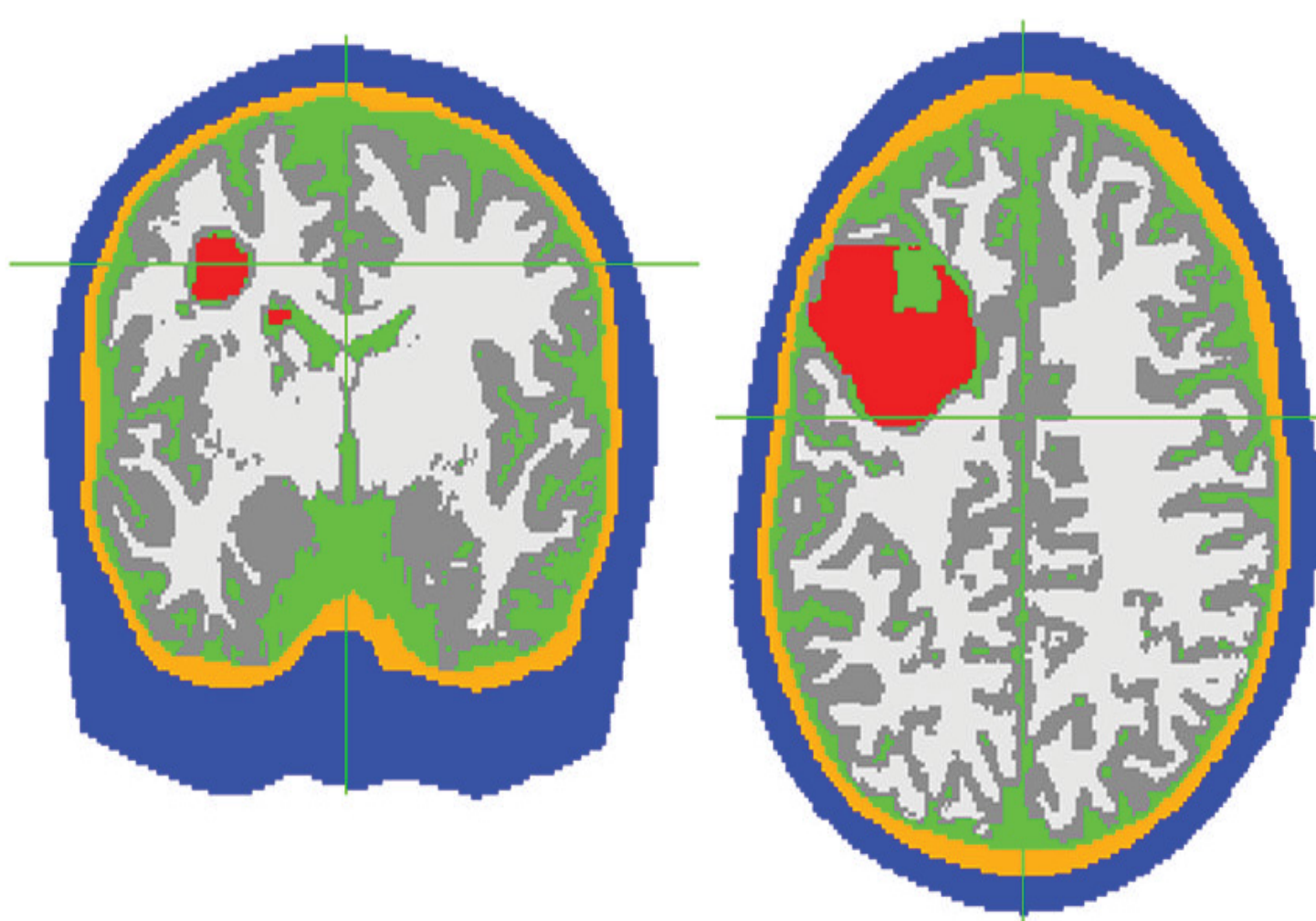# Image Based Modeling Pipeline

Defibrillation

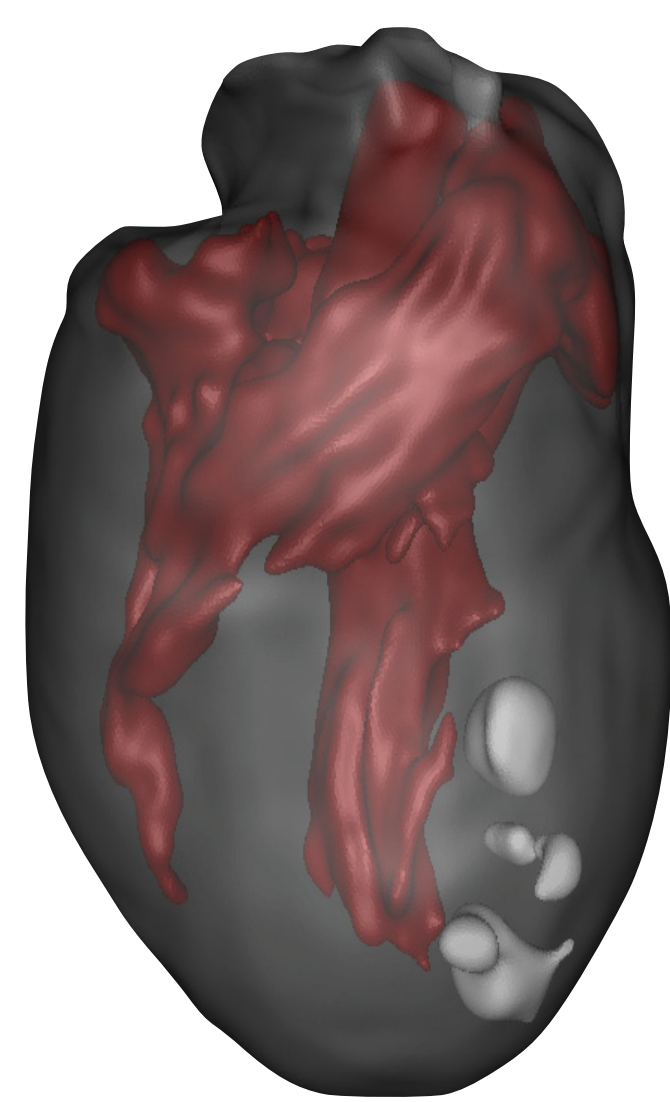Model of human torso with an ICD

Atrial Fibrillation

Model of the right atrium with measurement electrode locations
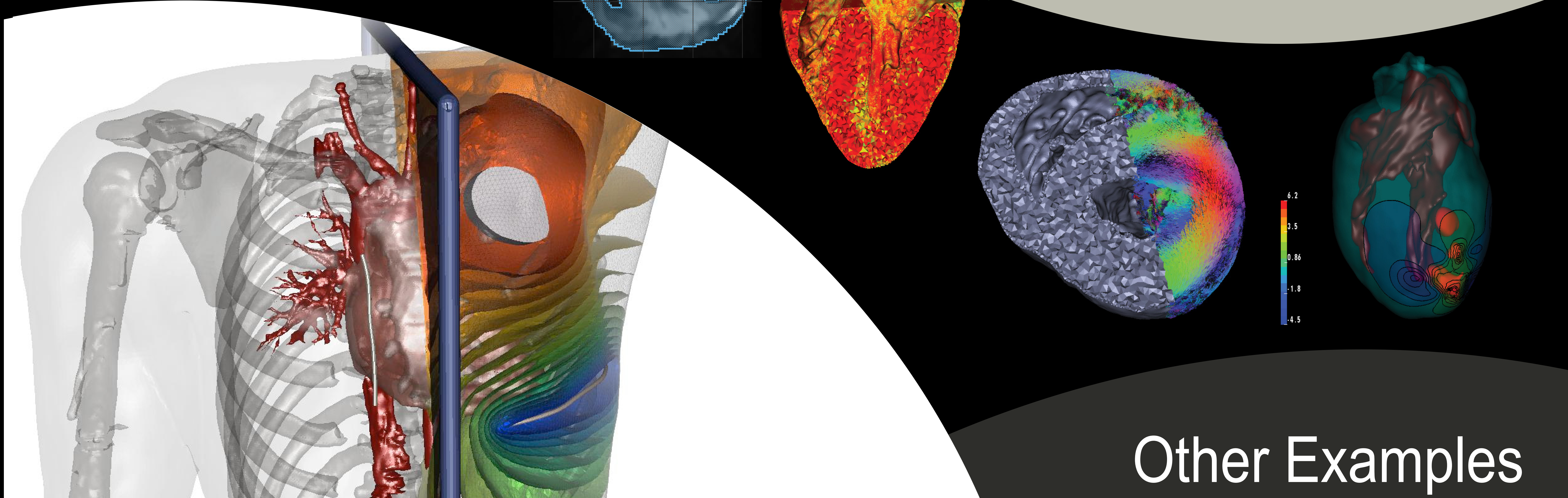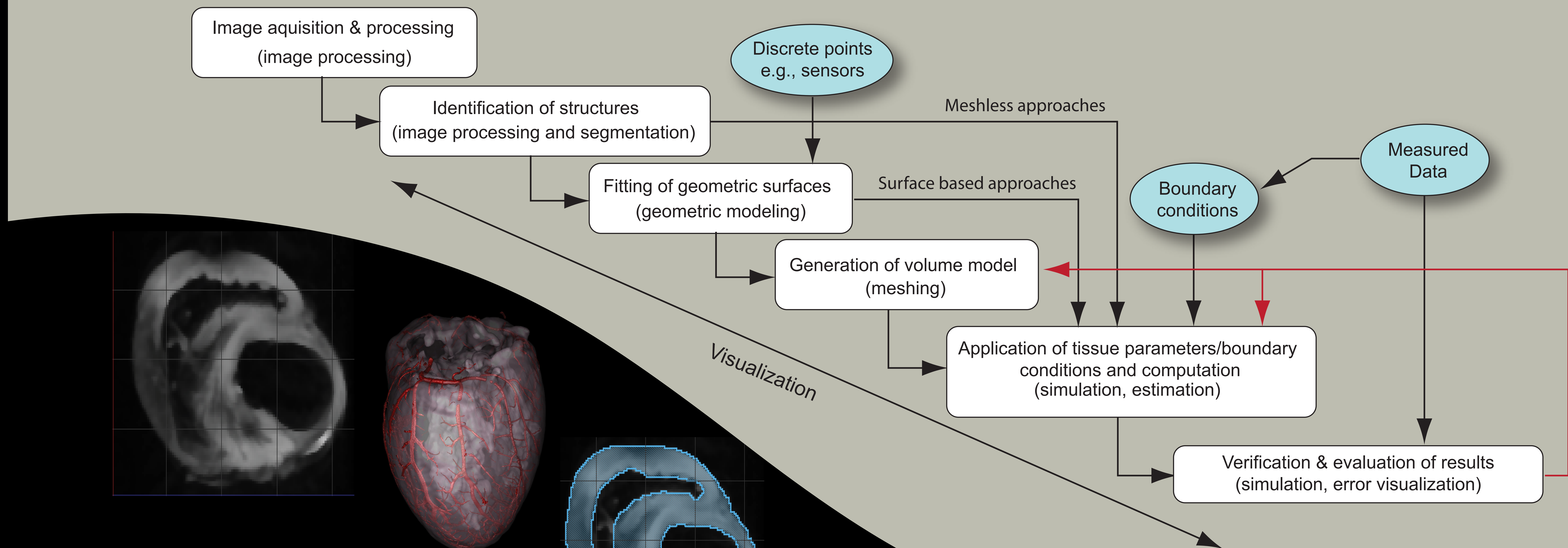
Epilepsy
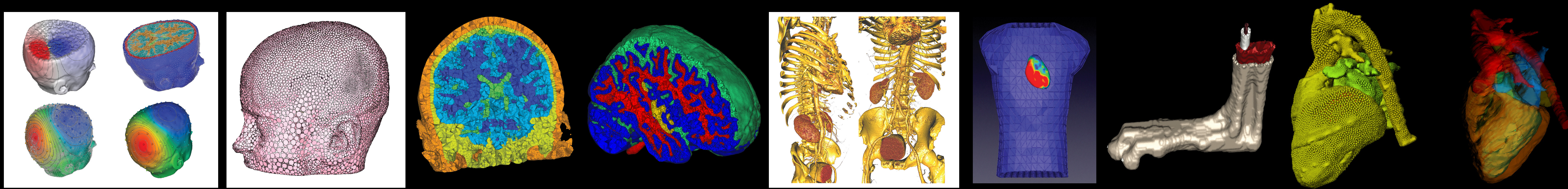
Model of human skull and brain

Myocardial Ischemia

Model of a heart with ischemic tissue

Seg3D

Seg3D 2.2

BioMesh3D

Bio Mesh 3D

BioMesh3D

map3d

map3d

Rob MacLeod, Bryan Worthen, J.R. Blackham, Chris Moulding, Jeroen Stinstra, Phil Ershler, Ted Dustman, Mike Matheson
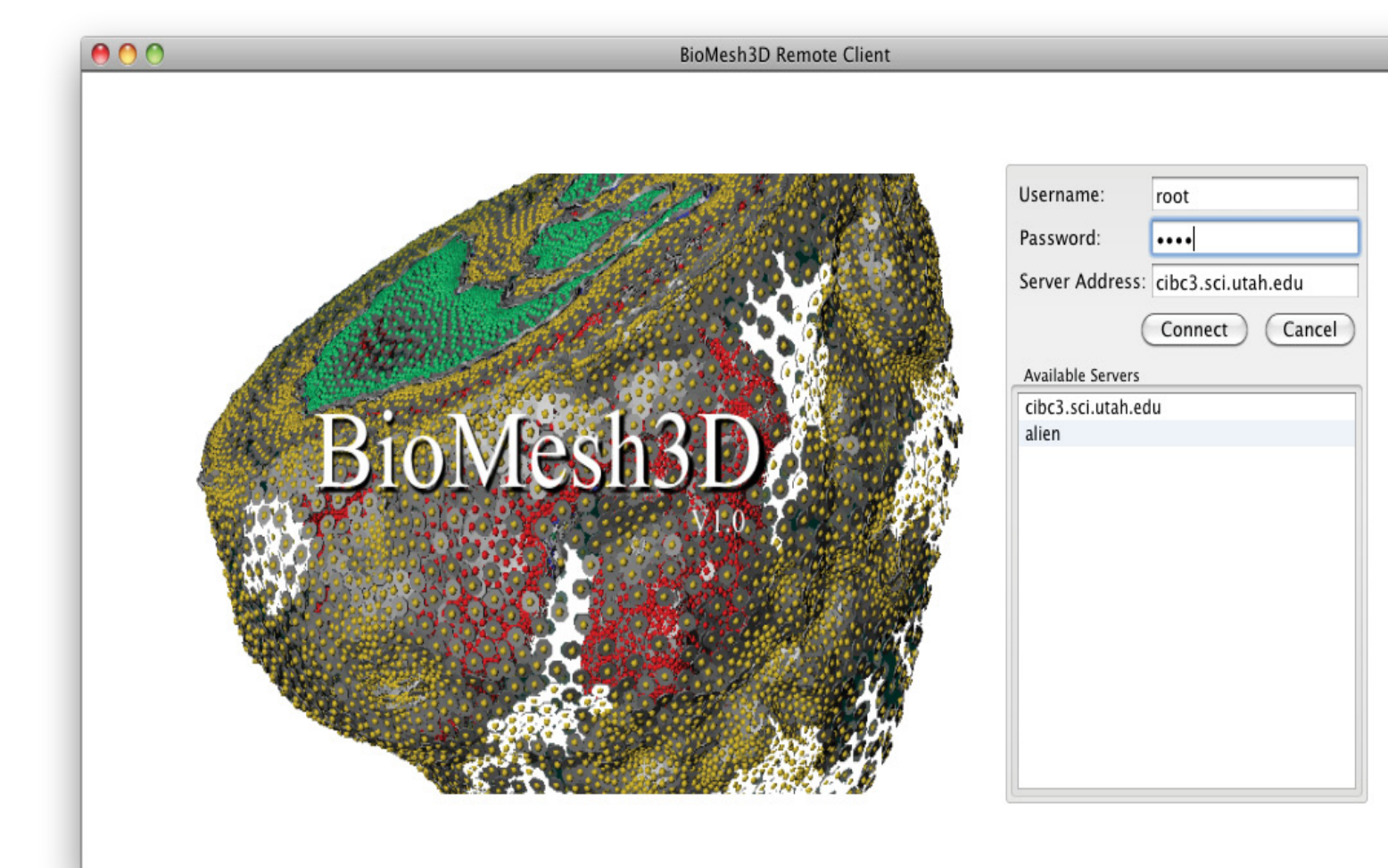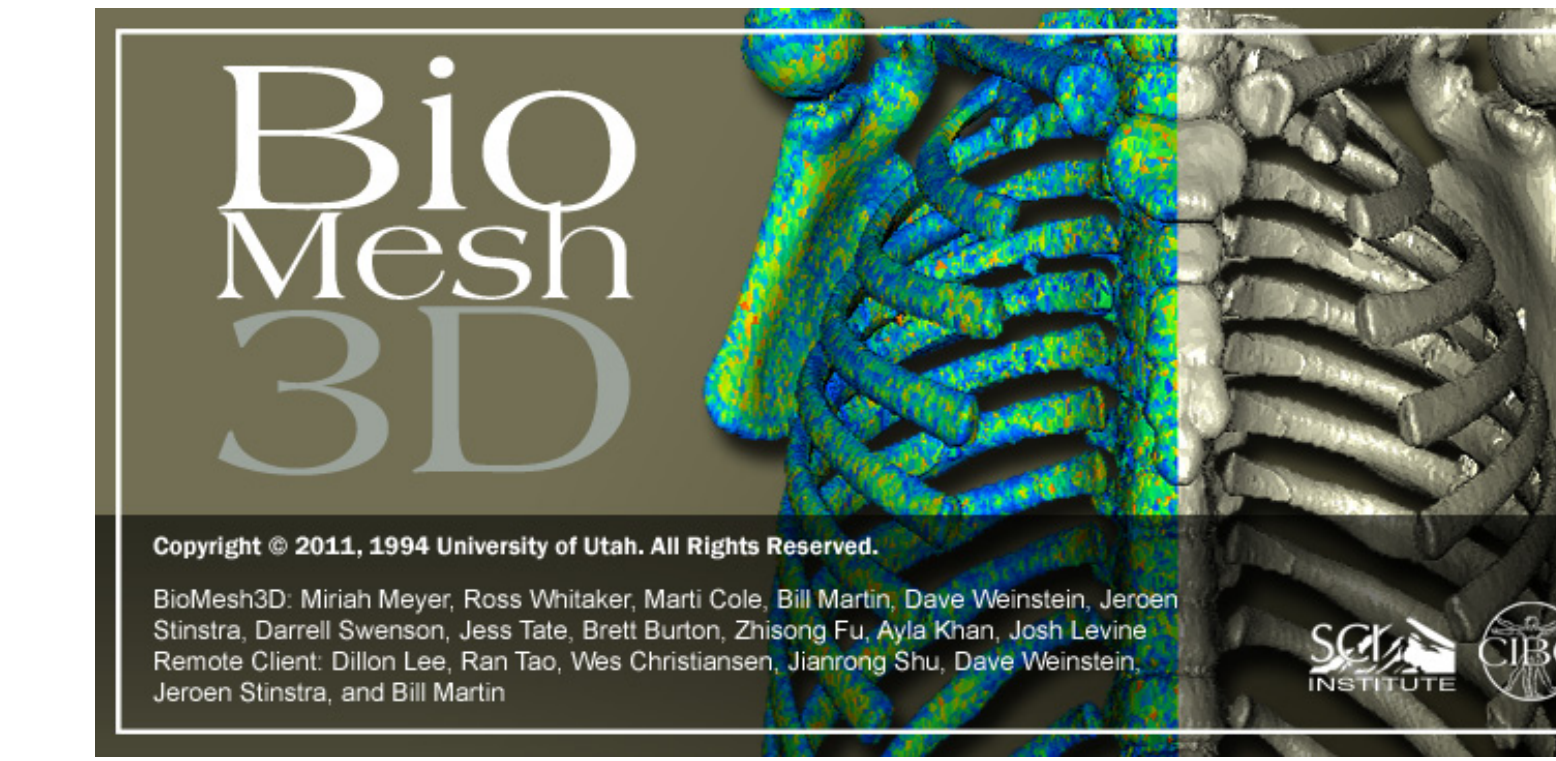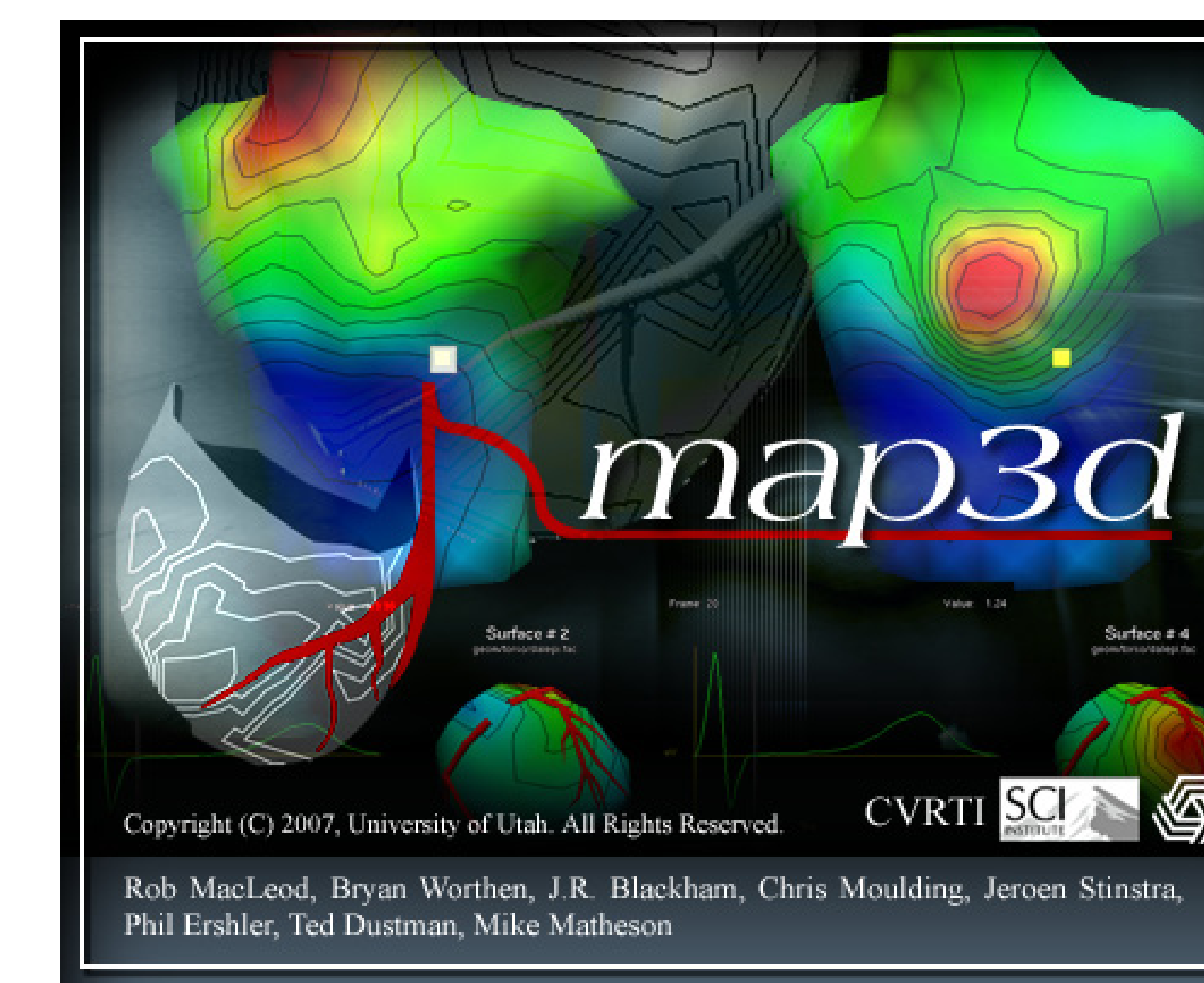
Forward/Inverse Toolkit

SCIRun 4.6 with BioMesh3D

Pipeline diagram

- Image aquisition & processing (image processing)
- Identification of structures (image processing and segmentation)
- Discrete points e.g., sensors
- Fitting of geometric surfaces (geometric modeling)
- Meshless approaches
- Surface based approaches
- Measured Data
- Boundary conditions
- Generation of volume model (meshing)
- Application of tissue parameters/boundary conditions and computation (simulation, estimation)
- Verification & evaluation of results (simulation, error visualization)
- Visualization

Other Examples

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