



From Statistical Atlases to Personalized Models: Understanding Complex Diseases in Populations and Individuals

This MICCAI 2006 workshop will feature a discussion of recent advances in statistical atlases for biomedical research as well as in image-based physiological modeling and simulation for diagnosis and treatment design. These areas are already playing and will continue to play an increasing role in biomedical research, diagnosis and treatment delivery.

The workshop will stimulate contributions at the cross-road of physics, biology, physiology, biomedicine, applied mathematics, computer science and engineering, all of which with clear connections to computational imaging.

Contributions are invited in – but not limited to – the following areas:

Computational Atlases of Anatomy and Function

- Atlas strategies: probabilistic, deformable, deformation- and density-based atlases
- Methodological underpinnings: data normalization, registration, fusion, and visualization aspects
- Statistical underpinnings: hypothesis testing and inference from population atlases, information fusion
- Mathematical underpinnings: shape and deformation theory and analysis and pattern extraction
- Exploitation of computational atlases in specific diseases

Personalized Physical Models and Simulation

- Virtual imaging techniques: imaging through personalized simulation
- Methods for image-based, non-invasive and in-vivo physiological measurements
- Methods for signal- and image-based parameter estimation of biophysical models
- Multi-scale modeling/simulation integrating molecular, structural and functional imaging
- Success stories in exploitation of simulation tools for diagnosis and therapy design
- Methods for gaining understanding of complex diseases through simulation of biophysical phenomena
- Tools for optimizing treatment design and delivery through subject-specific modeling and simulation
- Evaluation of simulation techniques with experimental and outcome data

Contributed papers should be 2 - 4 pages.

Please refer to <http://www.imm.dtu.dk/sa2pm/> for further details.

Important Dates

- Deadline for paper submission: May 1st 2006
- Notification of acceptance: July 1st 2006
- Deadline for camera-ready copy: August 15th 2006
- Workshop: October 6th 2006

Venue and Registration

The workshop will take place at [The IT University of Copenhagen](http://www.itu.dk), October 6th 2006. Registration will be handled by the [MICCAI 2006 registration process](http://www.imm.dtu.dk/sa2pm/).

Workshop Chairs

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