

Imaging in Medicine and Neurosciences

Monday May 21, 2001

- 8:30 *Novel Imaging Strategies*
- 8:30–9:20 *Registration*
- 9:20–9:30 **Eitan Tadmor** (UCLA / University of Maryland)
Opening Remarks
- 9:30–10:30 **Michael Phelps** (UCLA/School of Medicine)
A New World of Molecular Imaging: A gift from Mathematics
- 10:30–11:00 *Coffee Break*
- 11:00–12:00 **G rard Medioni** (University of Southern California)
Tensor Voting: A Computational Framework for Segmentation and Grouping
- 12:00–2:00 *Lunch (on your own)*
- 2:00 *PDEs in Imaging - Chair: Stanley Osher*
- 2:00–3:00 **Guillermo Sapiro** (University of Minnesota)
A tour on GBM for medical imaging
- 3:00–3:10 *Coffee Break*
- 3:10–4:00 **Allen Tannenbaum** (Georgia Institute of Technology)
Conformal and Area-Preserving Maps for Surface Warping and Image Registration
- 4:00–5:00 **Chandrajit Bajaj** (University of Texas, Austin)
Anisotropic Geometric Diffusion in 3D Imaging
- 5:00–5:30 *Discussion and Closing Remarks*
- 5:30–12:00 *Wine/Cheese Reception (Hosted by IPAM)*



Tuesday May 22, 2001

- 9:00 *Shape, Pattern Theory and Genetics - Chair: Eitan Tadmor*
- 9:00–10:00 **David Mumford** (Brown University)
The Infinite Dimensional Space of Shapes
- 10:00–10:30 *Coffee Break*
- 10:30–11:30 **Sam Gambhir** (UCLA/School of Medicine)
Imaging Gene Expression in Vivo
- 11:30–12:30 **Eric Clarkson** (University of Arizona)
Assessing the effectiveness of parameterizations for signals and backgrounds
- 12:30–2:00 *Lunch (Hosted by IPAM)*
- 2:00 *Shape and Level Sets - Chair: Simon Cherry*
- 2:00–3:00 **Ross Whitaker** (University of Utah)
A Direct Segmentation Approach for Tomographic Data
- 3:00–3:30 *Coffee Break*
- 3:30–4:30 **Steve Haker** (Surgical Planning Lab/Harvard)
Conformal and Area-Preserving Maps for Surface Warping and Image Registration
- 4:30–5:00 *Discussion and Closing Remarks*

Wednesday May 23, 2001

- 9:00 *Biomedical Imaging and Genetics - Chair: Paul Thompson*
- 9:00–10:00 **Desmond Smith** (UCLA/School of Medicine)
How the genome makes a brain
- 10:00–10:30 *Coffee Break*
- 11:30–12:30 **Nikos Paragios** (Siemens Corporate Research)
A Variational Approach for the Segmentation of the Left Ventricle in MR Cardiac Images
- 12:30–2:00 *Lunch (on your own)*
- 2:00 *Advanced Imaging and Reconstruction Approaches - Chair: Guillermo Sapiro*
- 2:00–3:00 **Simon Cherry** (University of California at Davis)
Radiology meets Biology: New imaging technology for the mouse
- 3:00–3:30 *Coffee Break*
- 3:30–4:30 **Richard Leahy** (University of Southern California)
Positron Emission Tomography: Image Formation and Analysis
- 4:30–5:00 *Discussion and Closing Remarks*

Thursday May 24, 2001

- 8:45–9:15 *Registration*
- 9:15–9:30 **Eitan Tadmor** (UCLA / University of Maryland)
Welcome Remarks
- 9:30 *Session I: Brain Mapping - Chair: Paul Thompson*
- 9:30–10:00 **Art Toga** (UCLA)
The Informatics and Computational Anatomy of Brain Mapping
- 10:00–10:30 **Ron Kikinis** (Harvard University)
Biomechanical Modeling of the Brain
- 10:30–11:00 *Coffee Break*
- 11:00–11:30 **Anders Dale** (Massachusetts General Hospital)
- 11:30–12:00 **James Brinkley** (University of Washington)
Visualization-based brain mapping
- 12:00–2:00 *Lunch (on your own)*
- 2:00 *Session II: Brain Image Analysis - Chair: Arthur Toga*
- 2:00–2:30 **Paul Thompson** (UCLA)
Mathematical Challenges in Population-Based Brain Mapping
- 2:30–3:00 **M. Faisal Beg** (Johns Hopkins University, Center for Imaging Science)
Computational Anatomy: Computing Metrics on Anatomical Shapes
- 3:00–3:30 **James Gee** (University of Pennsylvania)
Non-rigid Tensor Registration
- 3:30–4:00 *Coffee Break*
- 4:00–4:30 **Christos Davatzikos** (Johns Hopkins University/School of Medicine)
Deformable Shape Models for Computational Anatomy
- 4:30–5:00 **Gary Christensen** (University of Iowa)
Synthesizing Average Brain Shape and Validation
- 5:00–5:45 *Discussion and Closing Remarks*
- 5:45–6:30 *Break*
- 6:30–12:00 *Dinner for Speakers (Hosted by Laboratory of Neuro Imaging)*

Friday May 25, 2001

- 10:00–11:00 **Haitao Fan** (Georgetown University)
The Saint-Venant system. Derivation from Navier-Stokes and numerical issues
- 11:00–11:30 *Coffee Break*
- 11:30–12:15 **Benoit Perthame** (Ecole Normale Supérieure, Paris)
Front motion in multi-dimensional conservation laws with stiff source terms driven by mean curvature and variation of front thickness
- 12:15–2:00 *Lunch (on your own)*

