



# Program

*Conference Venue: Bikuben Conference Center, Haukeland University Hospital, Bergen, Norway*

See also <http://MedVizVCBM.UiB.no/venue.php>

## Wednesday September 7

- 12:00 Start registration (posters might be displayed from 08:00)
- 1300 – 1345 Lunch
- 1345 – 1400 Welcome by Head of Department of Clinical Medicine, University of Bergen, Nils Erik Gilhus

### Joint Session I: Visualization

Chairs: Helwig Hauser & Odd Helge Gilja (“Storstuen” = large room)

- 1400 – 1445 Hans-Christian Hege, Zuse Institute, Berlin:  
Visual Computing for Connectomics - Achievements and Challenges
- 1445 – 1530 Panel discussion: Future topics in Medical Visualization, moderated by Helwig Hauser
- 1530 – 1600 Coffee break and Posters

### Two parallel Sessions II:

#### MR modality

Chairs: Ingrid Haldorsen & Jarle Rørvik (“Storstuen” = large room)

- 1600 – 1630 Tijn van der Velden, UMC, Utrecht:  
Advanced MR diffusion and metabolic models characterizing tumors
- 1630 – 1640 Arvid Lundervold, Department of Biomedicine, University of Bergen:  
Brain imaging and machine-learning to explore brain gut axis in irritable bowel syndrome
- 1640 – 1650 Eli Eikefjord, Department of Radiology, Haukeland University Hospital, Bergen:  
Quantification of single kidney function and volume in living kidney donors using dynamic contrast-enhanced MRI
- 1650 – 1700 Sigmund Ytre-Hauge, Department of Radiology, Haukeland University Hospital, Bergen:  
In vivo MR spectroscopy predicts high tumor grade in endometrial cancer
- 1700 – 1730 Atle Bjørnerud, University of Oslo:  
MR perfusion for tumor characterization

### Visual exploration and Analysis of Biological Data

Chair: Timo Ropinski (“Auditorium”)

- 1600 – 1620 Ivan Kolesar, Dept. of Informatics, University of Bergen:  
Unfolding and Interactive Exploration of Protein Tunnels and their Dynamics
- 1620 – 1640 Nicholas Waldin, Vienna Technical University:  
Chameleon: Dynamic Color Mapping for Multi-Scale Structural Biology Models
- 1640 – 1700 Johannes Sorger, Vienna Technical University:  
Illustrative Transitions in Molecular Visualization via Forward and Inverse Abstraction Transform
- 1700 – 1720 Martin Hess, Technical University Darmstadt:  
Visual Analysis and Comparison of Multiple Sequence Alignments
- 1730 – 1800 Coffee break and Posters

### **Joint Session III: Short papers – Novel Visualization Techniques**

Chairs: Stefan Bruckner (“Storstuen” = large room)

- 1800 – 1815 Benjamin Behrendt, Otto-von-Guericke University, Magdeburg:  
Semi-Automatic Vessel Boundary Detection in Cardiac 4D PC-MRI Data Using FTLE fields
- 1815 – 1830 Serban Pop, University of Chester:  
Real-Time Guidance and Anatomical Information by Image Projection onto Patients
- 1830 – 1845 Salaheddin Alakkari, Trinity College Dublin:  
Volume Visualization Using Principal Component Analysis

### **Thursday September 8**

#### **Joint Session IV: Translational imaging**

Chairs: Martin Biermann & Lars R. Reisæter (“Storstuen” = large room)

- 0900 – 0930 Andreas J. Tulipan, Dept. of Radiology and Nuclear Medicine, Oslo University Hospital:  
Diagnosing prostate cancer with PET
- 0930 – 0950 Habib Baghiro, Department of Physics, NTNU, Trondheim:  
Focused ultrasound-mediated transport of poly (alkyl cyanoacrylate)  
nanoparticles across the blood-brain barrier in a melanoma brain metastasis model
- 0950 – 1030 Samer Ezziddin, Department of Nuclear Medicine, Saarland University Hospital, Bad Homburg:  
Radiopeptide treatment for prostate cancer
- 1030 – 1100 Coffee break and Posters

#### **Two parallel Sessions V:**

##### **Ultrasound**

Chairs: Odd Helge Gilja & Roald Flesland Havre (“Storstuen” = large room)

- 1100 – 1130 Paul Sidhu, King's College Hospital, London:  
Clinical Applications of Elastography: My Experience
- 1130 – 1145 Roald Flesland Havre, National Centre for Ultrasound in Gastroenterology, Dept. of Medicine, HUH:  
Endoscopic strain imaging of the pancreas
- 1145 – 1200 Mette Vesterhus, National Centre for Ultrasound in Gastroenterology, Dept. of Medicine, HUH:  
Elastography of the liver in Primary Sclerosing Cholangitis
- 1200 – 1215 Trond Engjom, National Centre for Ultrasound in Gastroenterology, Dept. of Medicine, HUH:  
Comparing secretin stimulated ultrasonography and MRI in cystic fibrosis patients and healthy controls
- 1215 – 1230 Elisabeth Steinsvik, National Centre for Ultrasound in Gastroenterology, Dept. of Medicine, HUH:  
Proximal stomach function in patients with IBS compared to Functional Dyspepsia using Ultrasound
- 1230 – 1300 Bjørn Angelsen, NTNU, Trondheim:  
SURF elastography for improved ultrasound

##### **Visual computing for Blood Flow & Motion Analysis**

Chairs: Bernhard Kainz (“Auditorium”)

- 1100 – 1130 Niels de Hoon, Technical University Delft:  
Temporal interpolation of 4D PC-MRI blood-flow measurements using bidirectional physics-based fluid simulation
- 1130 – 1200 Arjan Broos, Eindhoven University of Technology:  
A framework for fast initial exploration of PC-MRI cardiac flow
- 1200 – 1230 Rickard Englund, Linköping University:  
Coherence Maps for Blood Flow Exploration
- 1230 – 1300 Ali Sheharyar, Jacobs University Bremen & Texas A&M University at Qatar:  
Spatio-temporal Visualization of Regional Myocardial Velocities

**1300 – 1400 Lunch**

## **Joint Session VI: Poster summary and Short papers – Medical Data Analysis and Visualization**

Chairs: Lars Linsen (“Storstuen” = large room)

- 1400 – 1415 Nico Merten, University Magdeburg:  
Illustrative PET/CT Visualization of SIRT-Treated Lung Metastases
- 1415 – 1430 Dennis Eschweiler, RWTH Aachen University:  
A Feasibility Study on Automated Protein Aggregate Characterization Utilizing a Hybrid Classification Model
- 1430 – 1445 Alberto Corvo, Technical University Eindhoven:  
PATHONE: From one thousand patients to one cell
- 1445 – 1500 Veronika Šoltészová, Christian Michelsen Research and Dept. of Informatics, University of Bergen:  
A summary of the posters
- 1530 – 1600 Coffee break and Posters

## **Two parallel Sessions VII:**

### **PET/MR**

Chairs: Renate Grüner & Thomas Schwarzlmüller (“Storstuen” = large room)

- 1600 – 1630 Bernhard Sattler, University Hospital Leipzig:  
PET/MRI – Technology and performance, challenges and applications
- 1630 – 1640 Pedro Silva, Eindhoven University of Technology:  
Visualization of Variability in Radiotherapy Dose Planning
- 1640 – 1700 Hans-René Bjørsvik, Dept. of Chemistry, University of Bergen:  
Synthesis of <sup>11</sup>C labeled sulfasalazine for PET imaging of drug delivery across the blood brain barrier and uptake in tumor tissue
- 1700 – 1720 Live Eikenes, NTNU, Trondheim:  
Experiences with PET/MR in Norway

## **Illustrative and Comparative Medical Visualization**

Chairs: Ivan Viola (“Auditorium”)

- 1600 – 1620 Patrick Saalfeld, University of Magdeburg:  
Semi-immersive 3D Sketching of Vascular Structures for Medical Education
- 1620 – 1640 Nils Lichtenberg, University of Koblenz-Landau:  
Sline: Seamless Line Illustration for Interactive Biomedical Visualization
- 1640 – 1700 Gabriel Mistelbauer, Vienna Technical University:  
Aortic Dissection Maps: Comprehensive Visualization of Aortic Dissections for Risk Assessment
- 1700 – 1720 Sylvia Glasser, University Magdeburg:  
How to Evaluate Medical Visualizations on the Example of 3D Aneurysm Surfaces

## **Joint Session VIII: Posters**

1730 – 1830 Posters in the poster area (“K1”)

## **1900 Conference Dinner: Galleri Nygaten**

Common bus transport from the Conference venue (18:40). You may alternatively find the location by taxi to Nygaten 7 or look it up at <http://gallerinygaten.no/om-oss/>

## Friday September 9

### Two parallel Sessions IX:

#### Perfusion Imaging

Chairs: Torfinn Taxt & Erlend Hodneland (“Storstuen” = large room)

- 0900 – 0930 Radovan Jiřík, Institute of Scientific Instruments of the CAS, Brno:  
Recent Advances in MRI and Ultrasound Perfusion Imaging
- 0930 – 0950 Erik Hanson, Department of Mathematics, University of Bergen:  
Discretization dependency of classical models for perfusion - a simulation study
- 0950 – 1010 Kim Nylund, National Centre for Ultrasound in Gastroenterology, Dept. of Medicine, HUH:  
Ultrasound imaging of perfusion
- 1010 – 1030 José Manuel Prats Montalbán, Universidad Politécnica de Valencia:  
Multivariate image analysis for multiparametric phenotyping and prognosis in cancer

#### Simulation and Visual Analysis in Medicine

Chairs: Claes Lundström (“Auditorium”)

- 0900 – 0920 Philip Voglreiter, Graz University of Technology:  
Visualization-Guided Evaluation of Simulated Minimally Invasive Cancer Treatment
- 0920 – 0940 Oliver Mattausch, Swiss Federal Institute of Technology, Zurich:  
Monte-Carlo Ray-Tracing for Realistic Interactive Ultrasound Simulation
- 0940 – 1000 Sergej Stoppel, Department of Informatics, University of Bergen:  
Graxels: Information Rich Primitives for the Visualization of Time-Dependent Spatial Data
- 1000 – 1020 Renata Raidou, Technical University Eindhoven:  
Visual Analytics for the Exploration and Assessment of Segmentation Errors
- 1030 – 1100 Coffee break and Posters

#### Joint Session X: Computational Imaging

Chairs: Arvid Lundervold & Antonella Zanna Munthe-Kaas (“Storstuen” = large room)

- 1100 – 1130 Carola-Bibiane Schönlieb, Dept. of Applied Mathematics & Theoretical Physics, Univ. of Cambridge:  
Dynamic image analysis: from tracking of cells to dynamic MRI
- 1130 – 1145 Erlend Hodneland, Christian Michelsen Research and MedViz, Bergen:  
Image registration for early detection of fibrosis
- 1145 – 1200 Hiroshi Noborio, Dept. Computer Science, Osaka Electro-Communication University:  
Evaluation of depth-depth matching algorithm for following human liver whose motion is practical and also is occluded by human body
- 1200 – 1215 Alexander Lundervold, Faculty of engineering and business administration, Bergen University College:  
Imaging-based modeling of the human larynx for simulation of airflow during exercise
- 1220 – 1240 Kent-Andre Mardal, Department of Mathematics, University of Oslo:  
Brain & Water - computational modelling of the aging brain
- 1240 – 1315 **Awards** for the best PhD Poster, PhD oral presentation and for Image Contest

#### Concluding remarks

by Ragnar Nortvedt, MedViz, Bergen and Helwig Hauser, VCBM

- 1315 – 1400 **Lunch**