



# FROM VISION TO DECISION

## NEWSLETTER

YEAR 4, NUMBER 8

### Leadership Team:

#### Program Manager

Ragnar Nortvedt  
Tel 55970529 / 92829508  
[ragnar.nortvedt@helse-bergen.no](mailto:ragnar.nortvedt@helse-bergen.no)  
Scientific Director  
Odd Helge Gilja  
[odd.gilja@helse-bergen.no](mailto:odd.gilja@helse-bergen.no)  
Arvid Lundervold  
[arvid.lundervold@biomed.uib.no](mailto:arvid.lundervold@biomed.uib.no)  
Helwig Hauser  
[helwig.hauser@uib.no](mailto:helwig.hauser@uib.no)  
Antonella Munthe-Kaas  
[antonella.zanna@uib.no](mailto:antonella.zanna@uib.no)  
Renate Grüner  
[renate.gruner@ift.uib.no](mailto:renate.gruner@ift.uib.no)  
Dag Magne Ulvang  
[dagu@cmr.no](mailto:dagu@cmr.no)  
Ingrid Haldorsen  
[ingfrid.haldorsen@helse-bergen.no](mailto:ingfrid.haldorsen@helse-bergen.no)  
General Secretary  
Elin Myhrvold Riple  
Tel: 55972954  
[elin.riple@med.uib.no](mailto:elin.riple@med.uib.no)

#### Project Leaders:

Roald F. Havre  
Torfinn Taxt  
Bjørn Tore Gjertsen  
Knut Matre  
Paul L. Muren  
Arvid Lundervold  
Jarle Rørvik  
Ingrid Haldorsen  
Eli Renate Grüner  
Martin Biermann  
Ivan Viola  
Trygve Hausken  
Mai Tone Lønnebakken

Web:  
<http://medviz.uib.no>

Postal address:  
MedViz  
Att. Ragnar Nortvedt  
Haukeland University  
Hospital,  
Møllendalsbakken 7,  
5021 Bergen, Norway

### Dear MedViz Supporter

From the Editor's subjective point of view, the autumn is the best season of all. The colours in nature are fantastic, the seafood is easily accessible, the mountains are just waiting to embrace you, the local football team Brann is heading back to the league where they belong and you get wonderful silent evenings to develop your thoughts and hatch new ideas. Besides, you can follow both the monthly MedViz seminars and the VCF seminars. In the current issue you can read more about VCF and the UiB Visualization Group, but first of all, we give you an interview with a central MedViz player, Professor Antonella Zanna Munthe-Kaas from Department of Mathematics, UiB.

### Interview with Professor Antonella Zanna Munthe-Kaas



Antonella was born in Bari in the southern part of Italy. She took her Bachelor at University of Bari, including a research unit in mathematics with specialization in applied mathematics. -As a child I was always interested in mathematics and I wanted to go for engineering, but according to my father, this direction was not suitable for girls. I was rather recommended to choose mathematics to become a teacher. As a University Professor today one can say that I partly followed this advice, although I am very interested in the applications of mathematics in different disciplines such as image processing and medicine. There were, however, no opportunities to take a PhD in Bari, so after joining an international summer school in mathematics in Perugia, I was encouraged to study abroad. I got this opportunity when I received a scholarship from Italy and an European Union grant. I went on with a 3-years PhD study at Cambridge, followed by a research fellowship position at Newnham College in Cambridge, dealing with numerical solutions of isospectral flows, supervised by Professor Arieh Iserles. This was a good place to be a student because of its good reputation as a center of knowledge, with lots of world known scientists coming in all the time. In Cambridge they are quite good at facilitating research, and it is only yourself that puts the limits to what you can do, implying also that there is a rather high work pressure.

[Read more.](#)

### The UiB Visualization Group is an important MedViz cooperation partner

The UiB Visualization Group, managed by Professor Helwig Hauser at Department of Informatics focusses on [researching](#) and [teaching](#) of new solutions for the efficient and effective visualization of large and complex datasets from

- measurements
- computational simulation
- analytic modeling

for the purpose of data exploration, analysis and presentation. All these activities are relevant for different areas within medicine. They employ advanced computer graphics, 3D rendering and modern graphics hardware to achieve cutting-edge visualization for improved insight into data, leading to knowledge crystallization and improved decision making. Of particular interest for MedViz are the Visualization Group's activities within simulation-driven therapy, quantitative visualization, visualization of physiology and dynamic medical imaging of e.g. perfusion.

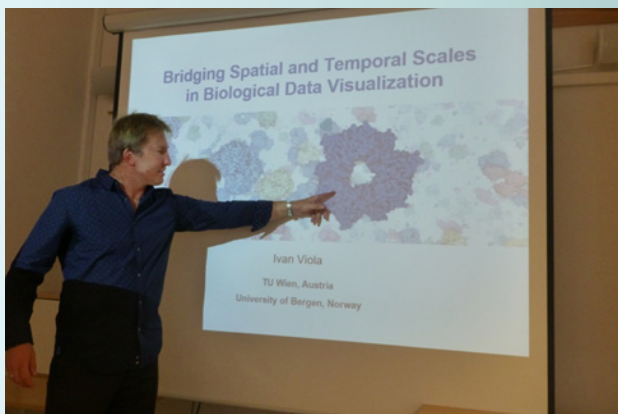
cmr



HELSE BERGEN  
Haukeland University Hospital



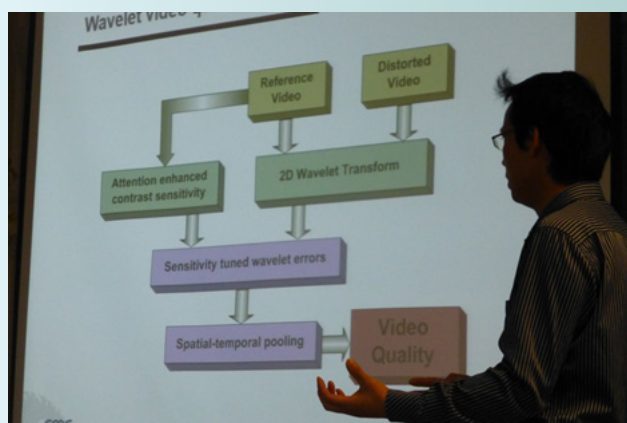
Visual Computing Forum (VCF) is a series of seminars organized by the Visualization Group with selected talks from the fields of visualization, image processing and computer graphics. The individual seminars are arranged approximately once a month, on Fridays from 10:15am to 11:00am, and they are interleaved with the MedViz seminars, so you can manage to follow both seminar series. The VCF seminars are arranged either at Høyteknologisenteret or at VilVite Science Center for about 15 attendants each time. MedViz and VCF will arrange a common and traditional «Christmas» Seminar in December.



Of special interest for MedViz members this autumn have been the two seminars given by Ivan Viola from Technical University in Vienna and by Junyong You from CMR.

Professor Ivan Viola gave a presentation on the topic "Bridging spatial and temporal scales in biological data visualization" on August 28, of particular interest for the molecular biologists, I would say. Ivan discussed visualization techniques that bridge five orders of magnitude of spatial scale by interactively displaying structural information from a single atom level up to entire bacteria cell size with complete molecular machinery. He also presented a technique for interactive 3D visualization of molecular reaction pathways that is controlled by quantitative simulation and is simultaneously visualized. In such visual environment the viewer can interactively control the visualization as well as the simulation parameters.

*Professor Ivan Viola from Technical University in Vienna*



Postdoc Junyong You from CMR gave a presentation on the topic "Perceptual visual quality assessment" on October 16. The talk presented visual mechanism modelling and applications in objective visual quality metrics. A video quality metric driven visual attention and foveation mechanism that has been developed by Dr. Junyong You was introduced as an example.

*Postdoc Junyong You from CMR*

## Upcoming events and deadlines

**November 3, 2015.** NRI Workshop in Gothenburg: [Implementation of research and innovation](#)

**November 4:** The Norwegian Research Council will inform about H2020 at HUS [http://www.forskningradet.no/no/Arrangement/Informasjonsdag\\_om\\_helse\\_SC1\\_i\\_H2020\\_Helsedemografiske\\_endringerlivskvalitet/1254012745144?lang=no](http://www.forskningradet.no/no/Arrangement/Informasjonsdag_om_helse_SC1_i_H2020_Helsedemografiske_endringerlivskvalitet/1254012745144?lang=no)

**November 6, 2015.** [MedViz Seminar in the Medviz Incubator](#), Møllendalsbakken 7, 5th floor between 12:00-13:00. Topics: 1. EuroBioImaging 2. Super resolution microscopy, by Frits Thorsen (MIC, UiB) and Stig Ove Bøe (Oslo University Hospital)

**November 16-17, 2015.** The 7th National PhD Conference in Medical Imaging. Scandic Fornebu, Oslo. [www.medicalimaging.no](http://www.medicalimaging.no)

**December 7, 2015.** Common VCF and MedViz «Christmas» Seminar in the MedViz Incubator, Møllendalsbakken 7, 5th floor between 12:00-14:00.

**Ragnar Nortvedt**  
Program Manager

