



SMIT 2010

Trondheim, Norway

September 2-4

22nd International Conference of the Society for Medical Innovation and Technology



SMIT 2010

Welcome to the 22nd International Conference of the Society for Medical Innovation and Technology. The 2010 SMIT international Conference will be a major event in the field of medical innovation. Topics on the conference will be presented by an international forum of outstanding endoscopic surgeons, interventional radiologists, researchers in medical technology and industrial manufacturers.

Enjoy the next few days in this fruitful environment of medical innovation and technology, all situated in a beautiful scenery.

Trondheim

The city was founded by Viking King Olav Trygvason in 997 AD, and occupies a special place in Norwegian culture and history. Trondheim was the nation's first capital, and continues to be the coronation city where Norway's kings from Harald Hårfagre (872–933) to King Harald V (1991 -) have been hailed, crowned and blessed. In its history the city was and is now again a popular destination for pilgrimages. Trondheim is also an ecclesiastical centre, a regional capital, a centre for industry and commerce, and an important education and research centre.

Trondheim is home to around 169 000 inhabitants. But if we count the large number of students (every sixth inhabitant is a student) the population swells to 180 000. The students adds a youthful exuberance to this thousand-year old city. While it is not a large metropolis, Trondheim's location and opportunities put it on an equal footing with the major cities of Europe.

Trondheim's internationally renowned university, and the city's many research communities ensure that it is a city of innovation and development of science, business and industry ventures. Trondheim is truly the nation's technological capital.

St. Olavs hospital

St. Olavs Hospital is a health enterprise and university hospital in the Mid-Norway health region, an area which consists of the counties of Møre and Romsdal, Sør-Trøndelag and Nord-Trøndelag and has a total of 630,000 inhabitants.

In the new University Hospital patient treatment, research and teaching are integrated functions. The new University Hospital is situated at Øya in the central part of Trondheim. The first clinical centres were completed in 2006. The entire project will be completed in 2015.

The hospital project consists of new buildings and a new organization. The centre model is introduced in the hospital from 2000. The hospital management consists of managing director and seventeen heads of department. The Faculty of Medicine has reorganized its departments corresponding to the centres.

The University Hospital in Trondheim is the first university in Norway which completely integrates patient treatment, research and teaching. The hospital will have a total area of 197 500. From this will 49,500 m² be used to university and teaching functions. Approximately 80 per cent of the existing buildings will be replaced by new ones.

NTNU and SINTEF

The Norwegian University of Science and Technology (NTNU) is Norway's primary institution for educating the nation's future engineers and scientists. The university also has strong programmes in the social sciences, teacher education, the arts and humanities, medicine, architecture and fine art. NTNU's cross-disciplinary research delivers creative innovations that have far-reaching social and economic impact.

The SINTEF Group is the largest independent research organisation in Scandinavia. Every year, SINTEF supports the development of 2000 or so Norwegian and overseas companies via research and development activities. SINTEF's goal is to contribute to wealth creation and to the sound and sustainable development of society. The organization generate new knowledge and solutions based on research and development in technology, the natural sciences, medicine and the social sciences.

Social events



Guided tour of St. Olavs Hospital

Contact the information desk for more information

The new university hospital in Trondheim St. Olavs hospital was officially opened by the Norwegian king, Kong Harald, on Saturday June 12 in 2010. The project has thus far been the largest land based project in Norway. The hospital is fully equipped with modern technology and delivers a solid infrastructure for treatment, education and research. During the conference you will have the opportunity to join us on a guided tour of the hospital. Please register at the information desk beforehand.



Concert at Nidaros Cathedral and welcome reception at To Tårn

Thursday

Nidaros Cathedral is the most important Lutheran church in Norway. The building of the oldest parts of the cathedral was begun in 1070 on top of the grave of holy King Olav Haraldsson and finished in 1300. Until 1906 the cathedral was used for the crowning ceremonies of the royal family. The cathedral has always been and still is an important focal point for pilgrims from northern Europe. Here you will have the opportunity to experience a live organ concert played on the famous baroque Wagner organ. Afterwards the welcome reception will be held in the adjacent establishment "To Tårn".

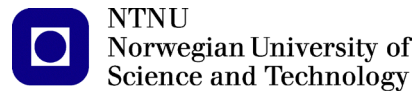


Get together dinner at Dokkhuset, Solsiden

Friday

Solsiden, a spirited and animated place located in an area of old shipyards and workshops, is one of the most modern and urban areas of the city. A plethora of cafés, restaurants and bars await the eager visitor with joie de vivre set on an evening and/or night rich with amusement. The informal get together party will take place in the old pump house of the area Dokkhuset. Nowadays Dokkhuset serves as a blend of restaurant and concert stage, primarily used for Jazz and chamber music. If you want to participate but still not have registered and paid for this event please contact the information desk on thursday during the conference.

Main partners and sponsors



We proudly present our Silver sponsor for SMIT 2010, Olympus. Olympus has been in collaboration with the Trondheim group for many years, especially in the Future OR project at St. Olavs Hospital.

Other partners and sponsors



SMIT committees

National organizing committee SMIT 2010

Thomas Langø	SINTEF
Toril A.N Hernes	NTNU/ SINTEF
Brynjulf Ystgård	St Olavs Hospital
Peter Friderichsen	SINTEF
Berit Brattheim	HIST
Olav Haraldseth	NTNU
Ronald Mårvik	NTNU/ St Olavs Hospital
Jan Gunnar Skogås	St Olavs Hospital
Hans Olav Myhre	NTNU/St Olavs Hospital
Cecilie Våpenstad	SINTEF
Roald Bergstrøm	KITH
Erik Fosse	UiO/Oslo University Hospital
Odd Helge Gilja	Haukeland/UiB
Ole Jacob Elle	UiO/Oslo University Hospital
PCO	Via Travel Tvetve AS

SMIT 2010 Organization

President	Brynjulf Ystgaard, MD, Norway
Co-President	Toril A N Hernes Prof , Norway
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Honorary President	John Wickham, MD, UK

Steering committee SMIT

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Erik Fosse, PhD, MD	Norway
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Eiji Kanehira, MD, PhD	Japan
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Gernot Kronreif, MD	Austria
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Andreas Melzer, MD, DDS	Germany
William Meng, Dr.	Hong Kong
Toril A. N. Hernes, Prof., PhD	Norway
Jens Rassweiler, MD	Germany
Richard Satava, MD	USA
Jose Manuel Schiappa, MD	Portugal
Uwe Spetzger, MD	Germany
Amir Szold, MD	Israel
Calin Tiu, MD	Romania
Daniel Wendt, MD	Germany
Brynjulf Ystgaard, MD	Norway

Senior Member Advisors of SMIT

Desmond Birkett, MD	USA
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Earl Owen, MD	Australia
John Wickham, MD	United Kingdom

Executive Office SMIT

General Secretary	Andreas Melzer, MD, Germany
Editor in Chief	Eiji Kanehira, MD, Germany
Treasurer	Marc O. Schurr, MD, Germany
Protocol Officer	Christine Melzer, Germany

Currently, interventional and surgical disciplines are facing an obvious paradox. Despite the excellent diagnostic imaging capabilities of MRI, which does not expose patients and physicians to ionizing radiation it is not widely used. Ultrasound and the emerging field of Biophotonic imaging are usually not MRI compatible and not designed to be used in conjunction with MRI. As a consequence, surgeons continue to use traditional operating techniques, which are based on visual inspection of the pathological anatomy structure either by traditional open or endoscopic surgery. Radiologists still have to expose themselves and their patients to long fluoroscopy times to perform complex cardiac or even paediatric interventional procedures. In fact, the frequent inadequacy of fluoroscopy as a navigation guide and to visualize the pathological target results in long procedure times, the use of nephrotoxic and allergenic iodine contrast agents and an unacceptable x-ray exposure. In Germany 1.5% of the cumulative risk of cancer has been attributed to diagnostic X-ray (Lancet 2004; 363:345-351).

The IIOS project will provide technology and training for the integration of ultrasound and biophotonics based imaging with magnetic resonance imaging (MRI), Computed Tomography (CT) and Positron Emission Tomography (PET) to define the specs of an Integrated Interventional Imaging Operating System (IIOS) aimed at minimal invasive treatment of common life-threatening disorders, e.g., cancer, cardiovascular disease and structural heart defects. Effective therapy of these conditions will require a range of safe surgical and interventional devices used with the necessary visualization and tracking under real-time image guidance.

IIOS will provide a group of researchers with internationally leading technical training facilities which cannot usually be provided to doctoral students, and, specific new technology study courses available to both medical and technology based researchers. The Network will foster cross interdisciplinary research and training between the clinical disciplines (Interventional Radiology/Cardiology, Cardiovascular Surgery, Anesthesia) on the one hand, and instrument design, safety and R&D with academic scientists and industry on the other. The research program of this Initial Training Network will provide a stimulating training environment for all participating early stage researchers and experienced researchers by utilizing unique imaging environments across Europe.

The IIOS consortium includes a critical mass of industrial and university research institute partners with high expertise in design, development, and manufacture of these devices and instruments. To ensure medical the safety and economical usability of the system and to allow an optimal integration into the future hospital workflow, 6 university hospitals will contribute their clinical and administrative expertise to the consortium in the fields of Interventional Radiology/Cardiology, Anaesthesia, Oncology, General and Cardiovascular Surgery and preclinical Image guided procedures. The consortium of the IIOS research and training process includes two Biomedical Technology Societies: DGBMT and SMIT&MEDIS Foundation in Rumania providing expert networking and conference organization. The is involved in the consortium and will play a key role in the exchange of knowledge and expertise to the new member states of the EU through hosting conference.



University
of
St Andrews



DUNDEE



Im Fokus das Leben
Universität zu Lübeck

GE Healthcare



UNIVERSITÄT
DES
SAARLANDES



FAKULTNÍ
NEMOCNICE
U SV. ANNY
V BRNE



NTNU



ST. OLAVS HOSPITAL
TRONDHEIM UNIVERSITY HOSPITAL
SINTEF



TU Delft
Delft
University of
Technology



Oslo
University Hospital

The society encourages world-wide membership from people and companies involved in medical practice, research and technology. This includes, but is not limited to medical practitioners, regardless of their specialty, and members of industry with an interest in innovative medical technologies as equal partners. Also welcome are nurses, the paramedical disciplines, medical administrators and lawyers with a medico-legal interest. Furthermore, the Society encourages physicians and engineers in training to take advantage of the reduced membership fee. Membership benefits include:

- Six issues of Minimally Invasive Therapy and Allied Technologies (MITAT), the official journal of the Society, listed in Current Contents.
- Free or reduced registration fee at the SMIT Annual Conference.
- Eligibility for election to the Steering Committee and the option to become a members of the SMIT Task Forces.

Membership application can be found at www.smit.de

Standard membership fee:

For institutional members, medical practitioners and members of industry.
EUR 225,00

Reduced membership fee:

For nurses, technicians, engineers and medical practitioners in training; applicable only if approved by a letter of the Head of Department.
EUR 100,00



The journal of Minimally Invasive Therapy was inaugurated in 1991 and has been successful in bringing the latest details of innovative inimally invasive therapy to the attention of interest groups. In our sixth year of publication, we were extremely fortunate to be enhanced by a merger with the Journal of Endoscopic Surgery and Allied Technologies. The journal provides an authoritative base fom which workers involved in minimally invasive surgery or interventional radiology may rapidly present their experience for the benefit of their colleauges and patients.

Keynote and special lecture speakers



Richard Satava - "The future of medical innovation"

Richard Satava, MD, FACS, is Professor of Surgery at the University of Washington Medical Center, and Senior Science Advisor at the US Army Medical Research and Materiel Command in Ft. Detrick, MD. Prior positions include Professor of Surgery at Yale University and Program Manager of Advanced Biomedical Technology at the Defense Advanced Research Projects Agency (DARPA). His surgical residency and a fellowship with a Master of Surgical Research was at the Mayo Clinic. He has served on the White House Office of Science and Technology Policy Committee on Health, Food and Safety. He is currently a member of the Emerging Technologies and Resident Education, and Informatics committees of the American College of Surgeons (ACS), is past president of the Society of American Gastrointestinal Endoscopic Surgeons (SAGES), past president of the Society of Laparoendoscopic Surgeons (SLS), and is on the Board of Governors of the National Board of Medical Examiners (NBME). He is on the editorial board of numerous surgical and scientific journals, and active in numerous surgical and engineering societies. He has been continuously active in surgical education and surgical research, with more than 200 publications and book chapters in diverse areas of advanced surgical technology, including Surgery in the Space Environment, Video and 3D imaging, Telepresence Surgery, Virtual Reality Surgical Simulation, and Objective Assessment of Surgical Competence and Training. While striving to practice the complete discipline of surgery, he is aggressively pursuing the leading edge of advanced technologies to formulate the architecture for the next generation of Medicine.



Professor Vidar Hepsø - "Imaging and navigation in the oil industry"

Vidar Hepsø is the Principal researcher and project manager of Statoil Research and Technology and a Professor at the Norwegian University of Science and Technology (NTNU). His work tasks are related to integrated operation or new collaborative practices enabled by new information and communication technology. He is the Statoil coordinator of SFI integrated operations at NTNU and an internal Statoil supervisor of 2-5 NTNU/BI students yearly within the Technology Master program at NTNU and project manager within Statoil's Summer projects for students. Vidar Hepsø's specialties include collaborative training, digital oil field of the future, anthropology, actor network theory, computer supported cooperative work, and participatory design. He recently published the book "Leading Research in Technoscience: Insider social science in socio-technological change".



Professor Kevin Cleary - "Image guided therapy"

Kevin Cleary is a Research Professor for the Imaging Sciences and Information Systems (ISIS) Center in the Department of Radiology at Georgetown University Medical Center. He is also a leader in the Computer Aided Interventions (CAIMR) group (part of the ISIS center) and a member of the research faculty at the Lombardi Cancer Center. He is an expert in the field of medical robotics, specializing in the development of technology for image-guided and minimally invasive medical procedures.



Erik Fosse - "Surgical aid in areas of armed conflict"

Erik Fosse is an MD and Professor of medicine at Oslo University, Norway. His specialty is general surgery and thorax surgery. He is currently the department manager at the Interventional center at the National Hospital in Oslo. Fosse received his PhD in 1987 at the University in Oslo. The SMIT congress in 2002 was managed by Fosse and his colleagues in Oslo. Fosse leads The Norwegian Aid Committee (NORWAC), a humanitarian organization that works mainly with health care issues. Their work is based on the principle of solidarity and equality regardless of religion, race and ethnic belonging.



Dr. Brynjulf Ystgaard - "Under the volcano: disaster preparedness"

Brynjulf Ystgaard is a surgeon at the St. Olavs Hospital in Trondheim, Norway. Ystgaard graduated medical school University of Bergen 1979 and his specialty is general and gastrointestinal surgery since 1991. He has been a consultant surgeon at the University Hospital in Trondheim since 1991. Ystgaard has a vast experience from war surgery and surgery and disaster relief through several missions with the Red Cross/Red Crescent movement for more than 15 years.

Conference overview

Start time	Thursday		Friday		Saturday	
	Auditorium Blåhø (ground floor) I³OS event	Auditorium Gråkallen (1st floor)	Auditorium Blåhø (ground floor) I³OS event	Auditorium Gråkallen (1st floor)	Auditorium Blåhø (ground floor)	Auditorium Gråkallen (1st floor)
07:30					MITAT editorial board meeting (ground floor)	
08:00	Registration starts		Registration			
08:30			Keynote talk II - plenary Professor Vidar Hepsø Imaging and navigation in the oil industry		Keynote talk III - plenary Image guided therapy Professor Kevin Cleary	
09:00	Welcome session - plenary		Scientific session 4A	Scientific session 4B	Scientific session 8A	Scientific session 8B
09:30	Keynote talk I - plenary The future of medical innovation Professor Richard Satava		Minimally Invasive Therapy II	Microtechnology in medicine - VECTOR	Medical imaging III	Communication and telemedicine + videoconference with the "Essen Live meeting", Germany
10:30	Coffee break - Exhibition - Poster		Coffee break - Exhibition - Poster		Coffee break - Exhibition - Poster	
11:00	Scientific session 1A Future OR	Scientific session 1B Minimally Invasive Therapy I	Scientific session 5A Training	Scientific session 5B Nanomedicine	Scientific session 9A Minimally Invasive Therapy III	Scientific session 9B Advances in endoscopic surgery II
13:00	Lunch break (ground floor)	Steering committee meeting (ground floor)	Lunch break	Lunch break and SMIT General assembly	Lunch break (ground floor)	
14:00			(13:45) Speed poster session			Award session - plenary Presentation of best oral and poster presentation.
14:30	Scientific session 2A Interventional radiology	Scientific session 2B Sensors and Robotics	Scientific session 6A Medical imaging II	Scientific session 6B New surgical techniques	(14:45) Scientific session 10 - plenary Joint scientific session with SLS in New York via videoconference	
16:30	Coffee break - Exhibition - Poster		Coffee break - Exhibition - Poster		(16:45-17:30) Closing of SMIT 2010	
17:00	Scientific session 3A Medical imaging I	Scientific session 3B OR logistics	Scientific session 7A Simulation and modeling	Scientific session 7B Advances in endoscopic surgery I	Announcement of SMIT 2011	
18:45	Special lecture I - plenary Erik Fosse Surgical aid in areas of armed conflict		Special lecture II - plenary Brynjulf Ystgaard Under the volcano: disaster preparedness			
19:15	Leisurely 10 minutes walk to Nidaros Cathedral		15 minutes walk to Solsiden through the city			
19:45	Concert at Nidaros Cathedral and welcome reception at To Tårn		Get together dinner at Dokkhuset, Solsiden			

NB: Program is subject to change without notice

Previous events:
 0800-0900 Registration (hall, ground floor)
 0900-0930 Welcome session (Blåhø)
 0930-1030 Keynote talk I - "The future of medical innovation" - Richard Satava (Blåhø)
 1030-1100 Coffee break / Exhibition / Poster (hall, ground floor)

Future OR

1100-1300 Aud. Blåhø (ground floor)

POs event (NTNU)/Scientific Industrial sponsored session

Chairs:
 Per Kristian Hoel, Eric Laporte

Hybrid rooms for cardiovascular surgery

Eric Fosse, The Interventional centre, Oslo University hospital

Hybrid operating room

Andreas Melzer, University of Dundee

An open source framework for systems integration in the Operating Room

Stefan Bohn, University of Leipzig, Innovation Center Computer Assisted Surgery (ICCAS)

Simulating handling forces of surgical lights: towards an improved pendant system design

Arjan J. Knulst, Delft University of Technology, Faculty of Mechanical, Maritime and Materials Engineering, Dept of BioMechanical Engineering

Operating room of the future. 5-year follow-up of the project

Jan Gunnar Skogås, St. Olavs Hospital

Future Technologies in the Operating Theatre

Malte Vahlenkamp, Olympus Europa Holding GmbH

Usefulness of a ceiling fixed illumination system in surgery

Eric Laporte, Department of Surgery - Hospital de Sabadell

Minimally Invasive Therapy I

1100-1300 Aud. Gråkallen (1st floor)

Chairs:
 Kevin Cleary, Thomas Langø

Initial clinical results for CT-guided electromagnetically tracked lung biopsy using the Image-Guided Surgical Toolkit (IGSTK) open source software

Kevin Cleary, Georgetown University Medical Center

2D/3D Registration of Ultrasound and Fluoroscopy: is image preprocessing useful?

Pascal Fallavollita, School of Computing, Queen's University

Reconstruction of Needle Tracts from Fluoroscopy in Prostate Brachytherapy

Lauren Gordon, Queen's University

Initial Experiences - Electromagnetic Navigation Technology implemented in endovascular procedures

Frode Manstad-Hulaas, Norwegian University of Science and Technology

Image guidance in spinal surgery

Ingerid Reinertsen, SINTEF/NTNU

Multisensor Navigation for flexible Instruments in an anatomical 3D-dataset

Armin Schneider, Research Group MITI, Klinikum r.d. Isar der TUM

Navigation and ultrasound imaging in surgery of pituitary tumours - technical considerations

Tormod Selbekk, SINTEF, NTNU

3d needle guidance with cone-beam ct: results in 41 patients suspected of renal malignancy

Harm Van Melick, St. Antonius hospital, Nieuwegein

Next event:
 1300-1430 Lunch break (ground floor) and SMIT Steering Committee Meeting (ground floor)

Previous event:
 1300-1430 Lunch break and general Assembly SMIT (Blåhø)

Interventional radiology

1430-1630 Aud. Blåhø (ground floor)

Chairs:
 Andreas Melzer, Toril A N Hernes, Hans Olav Myhre

Technology for MRI guided Endoscopic Surgery

Andreas Melzer, University of Dundee

MRI Guided Implantation of a Resonant Vena Cava Filter in a Thiel Embalmed Cadaver

Erwin Immel, University of Dundee

Imaging of voluntary joint motion from bi-plane fluoroscopy images

Geert Streekstra, Academic Medical Center, Amsterdam

Comparison of xray and MRI guided Implantation of a Resonant Balloon Expandable Stent in a Thiel Embalmed Cadaver

Erwin Immel, University of Dundee

Freehand SPECT in the operating room: first feasibility study on 21 patients

Nassir Navab, TU Munich

A field mapping technique for estimation of sensitivity in fmri.

Anne-Lene Mathisen, Oslo University Hospital

Modified multislice (64) computerised tomography in the diagnosis of retroperitoneal, rectovaginal and bowel endometriosis

I.J. Van der Wat, Endometriosis Institute, Johannesburg

First Clinical Procedures for Interlocking of Intramedullary Nails under Camera Augmented Mobile C-arm (camc)

Nassir Navab, TU Munich

Next event:
 1630-1700 Coffee break / Exhibition / Poster (hall, ground floor)

Sensors and robotics

1430-1630 Aud. Gråkallen (1st floor)

Chairs:
 Ole Jakob Elle, Øyvind Stavadahl

Transperineal robotic positioning system developed for prostate interventions: 3 years prospective clinical study

Henry Ho, Singapore General Hospital

A slave robot for vitreo-retinal ophthalmic surgery

Thijs Meenink, Technische Universiteit Eindhoven

Transperineal robotic positioning system developed for prostate interventions: In-Vivo Accuracy validation study

Preeti Mohan, Singapore General Hospital

Force sensor free teleoperated robotic surgery

Edvard Naerum, Oslo University Hospital

Sensorized implant for recognition of GI bleeding: in-vivo results

Sebastian Schostek, novineon Healthcare Technology Partners GmbH

Piton percutaneous instruments tele-operated needles

John Van Den Dobbels, Delft University of Technology

MRI Robot localization using tracking coils

Xu Xiao, University of Dundee

Simulation Model for Testing of a Cardiac Accelerometer Sensor

Espen W. Remme, The Interventional Center, Oslo University Hospital, Oslo, Norway

Thursday 2nd september

Friday 3rd september

Previous events:
1630-1700 Coffee break / Exhibition / Poster (hall, ground floor)

Previous event:
0830-0900 Keynote talk II - "Imaging and navigation in the oil industry" - Vidar Hepsø (Blåhø)

Medical imaging I

1700-1845 Aud. Blåhø (ground floor)

I³OS event (NTNU)/Scientific Industrial sponsored session

Chairs:
Odd Helge Gilja, Toril A N Hernes

Bio-photonic techniques: Physical principles and potential applications in Medicine

Rajesh Kumar, University of St. Andrews

An automated dynamic phantom to produce a figure of merit for the image quality of medical ultrasound imaging systems

George Corner, Ninewells Hospital

Progress in high resolution ultrasound towards in vivo pathology

Christine E. M. Demore, University of Dundee

Strain-ratio - for quantification of strain differences in quasi-static elastograms

Roald F. Havre, University of Bergen

Angle-independent flow imaging using plane-waves and parallel receive beamforming

Lasse Løvstakken, Norwegian University of Science and Technology

Real Time Elastography evaluation of rectal tumors within the out-patient clinical setting.

Jo Waage, University of Bergen

Overall clinical accuracy in ultrasound-based neuronavigation

Frank Lindseth, SINTEF, Norway

OR logistics

OR logistics
1700-1845 Aud. Gråkallen (1st floor)

Chairs:
Warren Sandberg, Andreas Seim

The Future of Clinical Decision Support in the Digital Operating Room

Jesse Ehrenfeld, Massachusetts General Hospital

Rapid detection of multiple instruments in endoscopic video

Loubna Bouarfa, Delft university of technology

Use of Events in Clinical Software

Andreas D. Landmark, NTNU

Supporting real time adjustments to perioperative work

Børge Lillebo, Norwegian University of Science and Technology, Trondheim

Improving Surgical Trays Logistics - reduction of complexity

Carl Christian Røstad, NTNU

Improving Operating Room Logistics at a Norwegian University Hospital

Andreas Seim, SINTEF, Technology and Society

Automated drug delivering system at St. Olav's Hospital, Trondheim

Liv Johanne Wekre, Central Norway Hospital Pharmacy Trust, Trondheim

The Future Of Operating Room Situational Awareness With A Mobile Device Application

Brian Rothman, Vanderbilt University Medical Center

Minimally invasive therapy II

0900-1030 Aud. Blåhø (ground floor)

I3OS event (Rikshospitalet)

Chairs:
Jenny Dankelman, Erik Fosse

Virtual planning and computer controlled repositioning for malunited distal radius fractures

J.G.G. Dobbe, University of Amsterdam

Feasibility of using Thiel cadaver model for Magnetic Resonance guided Focused Ultrasound Surgery

Alexander Volovick, University of Dundee

Multi-steerable instruments for endo-nasal skull base surgery

Paulus Breedveld, Delft University of Technology

A rigid reusable access port for Single Incision Laparoscopic Surgery

Stuart Brown, University of Dundee

Sleeve gastrectomy through the Quad-port LESS device

Andrea Domenico Califano, University of Catanzaro

Laparoscopic LASER Partial Nephrectomy – shortening of ischemia time. An animal study.

Mintz Y MD, Hadassah Hebrew University Medical Center, Jerusalem

Microtechnology in medicine - VECTOR

0900-1030 Aud. Gråkallen (1st floor)

Chairs:
Marc Schurr, Sebastian Schostek

Historic development of active capsules

Arianna Menciassi, Scuola Superiore Sant'Anna

New frontiers in capsule endoscopy

Sebastian Schostek, Novineon Healthcare Technology Partners GmbH

Enabling robotic functions in an endoscopic capsule

Oscar Alonso, University of Barcelona

A large European project finishing – From R&D to industry

Marc Schurr, Novineon Healthcare Technology Partners GmbH

Next event:
1845-1915 Special lecture 1 - "Surgical aid in areas of armed conflict" - Eric Fosse (Blåhø)
1915- Leisurely 10 minutes walk to Nidaros Cathedral
1945- Concert at Nidaros Cathedral and welcome reception at To Tårn

Next event:
1030-1100 Coffee break / Exhibition / Poster (hall, ground floor)

Previous events:
1030-1100 Coffee break / Exhibition / Poster (hall, ground floor)

Training

1100–1300 Aud. Blåhø (ground floor)

I3OS event (Rikshospitalet)

Chairs:
Ronald Mårvik, Amir Szold, Jenny Dankelman

An Advanced System for the Pre-operative Planning of a Pediatric Laparoscopic Procedure
Lucio Tommaso De Paolis, Salento University

Objective evaluation methodology for surgical motor skills assessment
Ignacio Oropesa, Technical University of Madrid

Real-time ultrasound simulation
Sjur Urdson Gjerald, Norwegian University of Science and Technology

Development of a video-based system for assistance in laparoscopic surgical training
Juan Alberto Sanchez Margallo, Minimally Invasive Surgery Centre Jesus Uson

A virtual reality simulator-based system for MIS objective evaluation
Patricia Sánchez-González, Technical University of Madrid

Visual force feedback in boxtrainers: is it useful?
Tim Horeman, Delft University of Technology

Construct validity of two modules on a virtual reality laparoscopic training simulator
Cecilie Våpenstad, SINTEF Technology and Society, Trondheim

A Simple Loss-of-Resistance Trainer for Epidural Needle Insertion
Dennis Van Gerwen, Delft University of Technology

Next event:
1300-1430 Lunch break with Speed poster session and SMIT General Assembly (Blåhø)

Nanomedicine, imaging and related topics

1100–1300 Aud. Gråkallen (1st floor)

Chairs:
Catharina De Lange, Odd Helge Gilja

The impact of ultrasound on liposomal drug release
Catharina De Lange Davies, Norwegian University of Science and Technology

SURF imaging
Rune Hansen, SINTEF, Trondheim

Abdominal applications of Contrast-Enhanced Ultrasound
Odd Helge Gilja, University of Bergen

Exploration of thermal issues in treatment planning for focused ultrasound surgery
Jing Gao, University of Dundee

Compilation of a pathological validation database for ultrasound monitoring of tumour ablation.
Jena Hall, Queen's University

The Laser biophotometry - as a non-invasive medical technique - used in the post-operative monitoring for inflammatory processes
Cristian Ravariu, Politehnica University of Bucharest

MRI-guided High Intensity Focused Ultrasound Ablation of Uterine Fibroids in a 3T MR scanner
Eric Dorenberg, Oslo University Hospital

Experimental treatment of porcine liver by magnet resonance guided high intensity focused ultrasound
Airazat M. Kazaryan, Oslo University Hospital

Previous event:
1300-1430 Lunch break with Speed poster session and SMIT General Assembly (Blåhø)

Medical Imaging II

1430–1630 Aud. Blåhø (ground floor)

I3OS event (Rikshospitalet)

Chairs:
Olav Haraldseth, Ingrid Gribbestad

Evaluation of leaflet kinematics of bioprosthetic heart valves via high-speed imaging
Daniel Wendt, West German Heart Center Essen

Real-time intraoperative visualization of myocardial circulation by augmented reality temperature display
Zoltán Szabó, Linköping University Hospital

Illustrasound: Novel Methods for Visualization of Couinaud Liver Segmentation
Ivan Viola, University of Bergen

Diffusion Tensor Tractography as complementary examination to BOLD fmri in patients with brain lesions?
Erik Magnus Berntsen, Norwegian University of Science and Technology

The mechanical aspects of mammography
Jerry E. De Groot, University of Amsterdam

Mammography and Pain
Jerry E. De Groot, University of Amsterdam

Flat Detector Computed Tomography and Objective Measures in Cochlear Implants
Ralf Greisiger, Oslo University Hospital

Next event:
1630-1700 Coffee break / Exhibition / Poster (hall, ground floor)

New surgical techniques

1430–1630 Aud. Gråkallen (1st floor)

Chairs:
Daniel Wendt, Marco M Lirici

Revascularization of Occluded Internal Carotid Artery Using an Endovascular Flow-Reversal System
Razvan Buciu, University of Mississippi

ESWT (Extracorporeal shock wave therapy) in the treatment of Peyronie's disease
Steffi Kabisch, Zeisigwaldkliniken Bethanien Chemnitz

Laparo-endoscopic single site sigmoidectomy with US dissection and compression anastomosis
Marco Maria Lirici, San Giovanni Addolorata Hospital

Laparoscopic resection for colorectal liver metastases: difference in observed over predicted survival
Airazat M. Kazaryan, Oslo University Hospital

A new ovine model of hybrid NOTES nephrectomy
Francisco M. Sanchez Margallo, Minimally Invasive Surgery Centre Jesus Uson

Hemodynamic and clinical experience with the new perimount magna ease supraannular bioprosthesis at 6 months follow-up
Daniel Wendt, West German Heart Center Essen

Development of Bone Anchor Substrates for Musculoskeletal Applications
Paul Maher, University of Dundee

Previous events:
1630-1700 Coffee break / Exhibition / Poster (hall, ground floor)

Simulation and modelling

1700–1845 Aud. Blåhø (ground floor)

IOS event (Rikshospitalet)

Chairs:
Chengli Song, Sebastien Muller

Open Source Tool for 3D Simulation of Complex Applicator Placements and Ablation Volume during Image Guided Percutaneous Cryoablations
Wolfgang Schramm, Vienna University of Technology

Laparoscopy pneumoperitoneum fuzzy modeling
Joao-Luiz Azevedo, Federal University of Sao Paulo

Finite Element Analysis on Interspinous Lumbar Non-Fusion Device
Lei Li, University of Shanghai for Science and Technology

Analysis of red blood cells distribution in the aorta with dissections
Wojciech Kowalczyk, University of Duisburg-Essen

Adverse effects of limb position on myoelectric control of upper-limb prostheses
Anders Fougner, Norwegian University of Science and Technology

A first step towards simulating pneumoperitoneum based on MR images
Jose Luis Moyano Cuevas, Minimally Invasive Surgery Centre Jesus Uson

Simulation of Blood Vessel Deformation by Particle Method
Nobuhiko Mukai, Tokyo City University

Advances in endoscopic surgery I

1700–1845 Aud. Gråkallen (1st floor)

Chairs:
Harald Fischer, Eiji Kanehira, Calin Tiu

New developments in Endoscopic Doppler Sonography - A valuable tool for interventional endoscopy
Karl E. Grund, University and University Hospital Tuebingen

Soloassist, A hydraulic camera holding system for minor access surgery
Adam Fiolka, Technischen Universität München

Development of a new 2mm grasper in SIES-POP (single incision endoscopic surgery plus one puncture)
Eiji Kanehira, AMG Endosurgery Academy

Rare indications of endoluminal surgery
Eiji Kanehira, AMG Endosurgery Academy

Short-term outcome following open and laparoscopic left lateral liver resection
Olaug Villanger, Oslo University Hospital, Rikshospitalet

Development of a Magnetic-activated Stereoscopic Camera for Single Port Laparoscopy
Massimiliano Simi, CRIM Lab, Scuola Superiore Sant'Anna, Pisa

Previous event:
0730-0830 MITAT editorial board meeting (Øya Helsehus, ground floor)
0830-0900 Keynote talk III - "Image guided therapy" - Kevin Cleary (Blåhø)

Medical Imaging III

0900–1030 Aud. Blåhø (ground floor)

Chairs:
Olav Haraldseth, Frank Lindseth

Inductively coupled MR visualization of stents in a soft embalmed Human cadaver model
Erwin Immel, University of Dundee

An approach to a new fluoroscopic X-ray image to a CT-like atlas registration algorithm of long bone fracture sites
Jose Franco Campos, Minimally Invasive Surgery Centre Jesus Uson

Fiber Tractography in Stroke Patients Revealed by MR Diffusion Tensor Imaging
Judy R James, University of Mississippi Medical Center

"Yes We Can" Correlate MR and Ultrasound Fetal Biometric Age
Judy R James, University of Mississippi Medical center

Non-expert assessment of left ventricular global contractility using pocket sized ultrasound machines.
Ole Christian Mjølstad, Norwegian University of Science and Technology

Enhancement of vertebrae in ultrasound imaging
Muller Sebastien, SINTEF Technology and Society, Trondheim

Communication and telemedicine

0900–1030 Aud. Gråkallen (1st floor)

Chairs:
Daniel Wendt, Roald Bergstrøm, Brynjulf Ystgård

Wireless Body Area Networks for Healthcare
Ilango Balasingham, Oslo University Hospital

Remote invasive monitoring of patients with congestive heart failure
Jacob Bergsland, Oslo University Hospital

Electronic diaries as a self-management tool after weight loss treatment
Anita Das, Norwegian University of Science and Technology

Legal framework of video recording in health care
Kirsten Henken, Delft University of Technology

Live surgery via videoconference
Essen Live Meeting

MRI guided robotic assisted procedures for pain treatment
Andreas Melzer, University of Dundee

Next event:
1845-1915 Special lecture II - "Under the volcano: Disaster preparedness" - Brynjulf Ystgaard (Blåhø)
1915-1945 15 minutes walk to Solsiden through the city
1945- Get together dinner at Dokkhuset, Solsiden (City centre)

Next event:
1030-1100 Coffee break / Exhibition / Poster (hall, ground floor)

Previous events:
1030-1100 Coffee break / Exhibition / Poster (hall, ground floor)

Minimally invasive therapy III

1100-1300 Aud. Blåhø (ground floor)

Chairs:
Joachim Kettenbach, Brynjulf Ystgaard

Long-term results of MR-guided Radiofrequency Ablation of Liver Metastases

Joachim Kettenbach, University Hospital Bern

Minimally invasive refixation of loosened prosthesis: instrument design

Gert Kraaij, Delft University of Technology

Navigated Ultrasound in Laparoscopic Surgery

Anna Rethy, NTNU

Advances in ultrasonic cutting to reduce unwanted thermal effects

Muhammad Sadiq, University of Dundee.

Fiber-optic Raman spectroscopy of bladder biopsy samples ex vivo

Matthijs Grimbergen, University Medical Centre Utrecht

Instrument-Guided Microwave Ablation of Liver Tumor during Liver Surgery

Daniel Inderbitzin, Inselspital Bern

Laparoscopic management of cystic pancreatic lesions

Irina Pavlik Marangos, Oslo University hospital

Laparoscopic pancreatic resection for cancer - is it justifiable?

Irina Pavlik Marangos, Oslo University hospital

Next event:
1300-1400 Lunch break (ground floor)
1400-1445 Award session (Blåhø)
1445-1645 Joint scientific session with SLS in NY via videoconference (Blåhø)

Advances in endoscopic surgery II

1100-1300 Aud. Gråkallen (1st floor)

Chairs:
Marco M Lirici, Sebastian Schostek

Time of Flight 3-D Endoscopy

Sarah Hempel, Technische Universität München

A novel approach to the use of surgical robotics in NOTES procedures

Sebastian Schostek, Novineon Healthcare Technology Partners GmbH

Effects of the design of laparoscopic tool handle in ergonomic assessment of the upper limb

Francisco M. Sánchez Margallo, Minimally Invasive Surgery Centre Jesus Uson

Use of tactile sensor information in an experimental haptic instrument system for laparoscopy

Sebastian Schostek, Novineon Healthcare Technology Partners GmbH

LESS Cholecystectomy: results of a randomized controlled trial

Marco Maria Lirici, San Giovanni Addolorata Hospital

ESCO trial: colonic stent versus emergency surgery in malignant colonic occlusion, an interim report

Mario Morino, University of Torino

Plastolock shaft-guide for flexible endoscopes rigidity control by safe heating

Arjo J. Loeve, Delft University of Technology

Previous events:
1400-1445 Award session (Blåhø)

Joint scientific session with the SLS conference in New York via videoconference

1445-1645 Auditorium Blåhø

This session looks at how close today's most futuristic technologies meet expectations. First the keynote speaker at our joint session at SLS in New York, CEO of one of the most inventive robotic companies, iRobot, will update us what commercial robots are doing. Then, at SMIT in Trondheim, we will have an update on the latest research relating to the future ORs for minimal access therapy, both from Trondheim, Oslo, and Dundee in Scotland. In Trondheim, there will be a tour of one of the latest "OR of the Future" projects just completed and opening. In addition to the live tour there will be presentations of the latest advances in medical technologies for clinical practice. Have expectations been met?

Agenda

1. Keynote Speaker, Todd Loofbourrow, presents "Robotics, Medicine, and the Future of Healthcare...Building Businesses out of Ideas"
2. "Ultrasound and image guided surgery - A collaboration between SINTEF, St. Olavs Hospital and NTNU in Trondheim", by Toril N Hernes, Prof NTNU and Research Director SINTEF. Including a live guided tour of the Future OR in Trondheim
3. Presentation of the Future OR in Oslo, including tour, by Prof Erik Fosse, Department Director Rikshospitalet
4. Presentation of the Future OR project in Dundee, including live tour, by Prof Andreas Melzer, Director of IMSaT

Information about SLS

SLS is the largest Minimally Invasive or Laparoscopic Society in North America and perhaps worldwide with over 6000 active members. Many Laparoscopic and MIS specialties are represented; the main three are Surgical Endoscopy, Gyn Laparoscopy, and Endourology. SLS' focus is multispecialty, providing a multidisciplinary education by giving a comprehensive view that is more inline with better physician orientation and patient outcome. SLS is lead by Paul Alan Wetter, MD.

Next event:
1645-1730 Closing of SMIT 2010 (Blåhø)

Ensuring patient values in the development of hospital information systems

Line Melby, Norwegian University of Science and Technology (NTNU)

The Biomedical Wireless Sensor Network (BWSN2) project

Karl Øyri, Oslo University Hospital

Improving PW-Doppler ultrasound using adaptive signal processing

Ingvild Ekroll, NTNU

Improvements of MR Imaging of Thiel Embalmed Human Cadavers

Mariana Gueorguieva, University of Dundee,

Concept of Multimodality Image Guided Diagnostic and Therapy for Cancer

Fabiola Fernandez-Gutierrez, University of Dundee

Skin shift and its effect on navigation accuracy in image-guided neurosurgery

Takashi Mitsui, Nagoya University

Unified framework for estimation of the intima-media thickness of the common carotid artery using active contour model

Pawel Turcza, AGH University of Science and Technology

Risk factors for recurrence after transanal endoscopic microsurgery for rectal malignant neoplasm

Marco Ettore Allaix, University of Torino

Critical ischemia of the lower limbs surgical treatment

Francisca Blanca Calinescu, Army's Center for Cardiovascular Diseases Bucharest

Endoprostheses for endovascular repair of subrenal aortic aneurysms

Ionel Droc, Army's Center for Cardiovascular Diseases Bucharest

The Nanoporation project: A potential new application of Magnetic Resonance guided Focused Ultrasound (mrgfus)

Dana Gourevich, University of Dundee

Flexible double channel ureterorenoscopy: first results

Thomas Horn, Klinikum rechts der Isar der Technischen Universität München

Design of Patch Insulin Pump using piezoelectric micropump

Kunyong Lu, University of Shanghai for Science and Technology

Trans-vaginally assisted single incision laparoscopic right hemicolectomy for colon cancer: preliminary results

Giuseppe Navarra, University Hospital of Messina

Effects of TRUS and Fluoroscopy Registration Error on Dosimetric Quality in Prostate Brachtherapy

Mark Wu, Queen's University

Preclinical testing of stents and stentgrafts, models of stents

Jiri Zahora, Charles University in Prague

The FUGE Bioinformatics Platform: a central platform in the FUGE2 period

Finn Drabløs, Norwegian University of Science and Technology (NTNU)

Programme for Bioinformatics at NTNU

Finn Drabløs, Norwegian University of Science and Technology (NTNU)

Combined Coronary Artery By-pass and heart valve surgery

Ionel Droc, Army's Center for Cardiovascular Diseases Bucharest

The late results of combinet treatment of the patients with rectal cancer

Ilgiz Gataullin, Kazan State Medical Academy

A study of echogenic regional anaesthesia needles in Thiel cadavers

Shuo Guo, University of Dundee

Suture-free anastomosis of the colon Experimental comparison of two cyanoacrylate adhesives

Jiri Paral, University of Defense, Hradec Kralove

A study of echogenic regional anaesthesia needles in Thiel cadavers

Guo Shuo, University of Dundee

Design of a novel manipulation environment to evaluation interfaces for multifunctional steering devices

Chunman Fan, Technology University of Delft

Training phantom of soft tissue with vessels (for ultrasound and hyperthermia)

Josef Hanus, Charles University in Prague

Efficacy and Necessity of Nasojejunal Tube after Gastrectomy

Sadjad Noorshafee, Mashhad University of medical sciences

Objective assessment of basic laparoscopic skills using automatic video-based technique

Jose Blas Pagador Carrasco, Minimally Invasive Surgery Centre Jesus Uson

Training on a virtual reality simulator is it really possible a correct evaluation of the surgeons experience?

Eugen Tarcoveanu, Gr.T. Popa University of Medicine and Pharmacy Iasi

Analysis of eye movement during colonoscopic polypectomy observation

Yasushi Yamauchi, Tokyo University

E-MIS: e-learning and multimedia contents for minimally invasive surgery

Luisa F. Sanchez Peralta, Minimally Invasive Surgery Centre Jesus Uson

Modelling the gastrin signalling pathways

Sushil Tripathi, Norwegian University of Science and Technology (NTNU)

Cavitation in Therapeutic Ultrasound

Bjoern Gerold, University of Dundee

Trans-Fascial Laparoscopic Mesh Fixation: A Procedural Comparison Using The Standard Suture Passer Versus A Novel Tool - Imesh Stitcher™ Device

Mintz Y M, Hadassah-Hebrew University Medical Center, Jerusalem

Miniature Camera For Enhanced Visualization For Single Incision Laparoscopic Surgery And Notes

Mintz Y MD, Hadassah-Hebrew University Medical Center, Jerusalem

MiNa Lab

Morten Borch, SINTEF, Norway



Dokkhuset

Radisson Blu Royal Garden

Comfort Hotel Trondheim

Prinsen Trondheim

Quality Hotel Augustin

Thon Hotel Trondheim

Comfort Hotel Park

Nidaros Cathedral & To Tårn

**Øya Helsehus (conference location)
Mauritz Hansens gate 2**

St. Olavs Hospital