

## Welcome to the second HiPerNav ESR Training event in Trondheim

Monday 25<sup>th</sup> to Friday 29<sup>th</sup> September, 2017



*Bryggene, Trondheim city center (Photo from: Visit Trondheim)*

### Program at a glance

Monday	Tuesday	Wednesday	Thursday	Friday
<ul style="list-style-type: none"> <li>• Navigation</li> <li>• Registration</li> <li>• Tracking</li> <li>• Surgical training</li> <li>• VR simulators</li> </ul>	<ul style="list-style-type: none"> <li>• Intraoperative imaging and navigation</li> <li>• ML/AI/DL</li> </ul>	<ul style="list-style-type: none"> <li>• Communication and outreach</li> <li>• Software development</li> <li>• CustusX</li> <li>• Workflow</li> </ul>	<ul style="list-style-type: none"> <li>• Research and project management</li> <li>• Ethics</li> </ul>	<ul style="list-style-type: none"> <li>• Future OR</li> <li>• Interdisciplinary dialogue</li> </ul>



Monday 25th September		
Venue: NSALK, St. Olavs hospital		
Time	Topic	Speakers/responsible
09:00	Arrival and welcome to NSALK and USIGT	Thomas Langø, SINTEF
09:15	Introduction to navigation in surgery	Thomas Langø, SINTEF
09:45	ESR task for the week!	Thomas Langø, SINTEF Frank Lindseth, NTNU/SINTEF
10:15	Coffee break	
10:30	Tracking technologies – brief overview	Thomas Langø, SINTEF
11:00	Registration techniques Tools for R&D in registration	Frank Lindseth, SINTEF/NTNU Thomas Langø, SINTEF
12:00	Lunch	
13:00	Introduction to NSALK VR training simulators for lap.	Dr. Ronald Mårvik, St. Olavs Hospital
13:30	The effect of training simulators for laparoscopic surgery	Cecilie Våpenstad, SINTEF/NTNU
14:15	Coffee break	
14:30	Hands-on: Testing surgical simulators for laparoscopy for all ESRs	Dr. Ronald Mårvik, NSALK, St. Olavs hospital Cecilie Våpenstad, SINTEF/NTNU, Kirsten Rønning, NSALK/St. Olavs h.
16:00	Trondheim city tour with guide	Javier Pérez de Frutos, SINTEF
19:00	Dinner for ESRs, WP leaders and supervisors	AiSuma Restaurant <a href="http://www.aisuma.no">http://www.aisuma.no</a>
<b>Meeting venue NSALK, St. Olavs hospital</b> NSALK – Norwegian National Advisory Unit on Advanced Laparoscopic Surgery <a href="http://www.nsalk.org/home/">http://www.nsalk.org/home/</a> , Prinsesse Kristinas gate 5, Trondheim, map location: <a href="https://www.google.no/maps/place/Prinsesse+Kristinas+gate+5,+7030+Trondheim/@63.4215107,10.3908741,1444m/data=!3m1!1e3!4m5!3m4!1s0x466d3192f38b52e9:0x852586c88143e019!8m2!3d63.4187055!4d10.387764">https://www.google.no/maps/place/Prinsesse+Kristinas+gate+5,+7030+Trondheim/@63.4215107,10.3908741,1444m/data=!3m1!1e3!4m5!3m4!1s0x466d3192f38b52e9:0x852586c88143e019!8m2!3d63.4187055!4d10.387764</a>		

Tuesday 26th September		
Venue: NTNU, MTFS / Norwegian Brain Centre		
Time	Topic	Speakers/responsible
09:00	Ultrasound guided Neurosurgery	Tormod Selbekk, SINTEF
09:45	Ultrasound probe calibration	Lars Eirik Bø, SINTEF/NTNU
10:15	Image-guided Endovascular therapy, Registration	Geir Arne Tangen, SINTEF
11:00	Coffee break	
11:15	Navigation in Bronchoscopy – Registration techniques and intraoperative visualization	Thomas Langø, SINTEF
12:00	Lunch	
13:00	Deep learning fundamentals	Frank Lindseth, SINTEF/NTNU
14:00	Clinical project example using machine learning techniques	Erik Smistad, SINTEF/NTNU
14:45	Coffee break	
15:00	ESR task for the week! Session 1	All ESRs
19:00	Social / Dinner (ESRs organise)	ESRs / B.E.E.R. ☺

**Meeting venue MTFS / Norwegian Brain Center**  
 Medical Technology Research Center (MTFS) / Norwegian Brain Center  
 Ground floor, Seminarrom 1, left hand side just after entering the main entrance  
 Olav Kyrres gt 9, 7030 Trondheim  
 Map location:  
<https://www.google.no/maps/place/Olav+Kyrres+gate+9,+7030+Trondheim/@63.420508,10.3931842,2895m/data=!3m1!1e3!4m5!3m4!1s0x466d3193c0d264ff:0xa24efcb43f3d4314!8m2!3d63.4203945!4d10.3926922>



Wednesday 27th September		
Venue: SINTEF, MTF5 / Norwegian Brain Centre		
Time	Topic	Speakers/responsible
09:00	Transferrable skills <b>Communication and outreach</b>	Anne Steenstrup-Duch, SINTEF Communications Director
09:45	Introduction to the CustusX open source research platform for intraoperative image-guided interventions	Ole Vegard Solberg, SINTEF Jon Eiesland, SINTEF
10:30	Coffee break	
10:45	Hands-on testing of CustusX in ultrasound-based image-guided interventions (2-3 phantom set-ups)	Ole Vegard Solberg, SINTEF Jon Eiesland, SINTEF Geir Arne Tangen, SINTEF
12:00	Lunch	
13:00	Hands-on testing of CustusX cont.	
14:00	Workflow analysis in non-invasive liver therapy	Arjo Loeve, TU Delft
14:45	ESR task of the week! Session 2	All ESRs
19:00	Social / Dinner (ESRs organise)	ESRs / B.E.E.R. ☺

**Meeting venue SINTEF**  
 SINTEF, Research Group for Medical Technology  
 Medical Technology Research Center (MTFS) / Norwegian Brain Center  
 4<sup>th</sup> floor (4. etg.) South in building, Olav Kyrres gt 9, 7030 Trondheim. Map location:  
<https://www.google.no/maps/place/Olav+Kyrres+gate+9,+7030+Trondheim/@63.420508,10.3931842,2895m/data=!3m1!1e3!4m5!3m4!1s0x466d3193c0d264ff:0xa24efcb43f3d4314!8m2!3d63.4203945!4d10.3926922>



Thursday 28th September		
Venue: NTNU, Gløshaugen		
Time	Topic	Speakers/responsible
09:00	Transferrable skills <b>Research and Project management</b>	Sara Hajikazemi Research Scientist, SINTEF
10:15	Coffee break	
10:30	Transferrable skills <b>Ethics</b>	Dr. Sophia Efstathiou, Postdoc, Programme for Applied Ethics, NTNU
12:30	Lunch	
13:30	ESR task of the week! Session 3	All ESRs
19:00	Social / Dinner (ESRs organise)	ESRs / B.E.E.R. 😊

### Meeting venue NTNU

<http://bit.ly/2v2qZDk>



Friday 29th September		
Venue: NTNU, Gløshaugen		
Time	Topic	Speakers/responsible
09:00	Presentation of the Future OR project at St. Olavs hospital	Gabriel Kiss, Future OR project, St. Olavs hospital/NTNU
10:00	Coffee break	
10:30	Transferrable skills <b>Interdisciplinary dialogue</b>	Dr. Sophia Efstathiou, Postdoc, Programme for Applied Ethics, NTNU
12:00	ESR task of the week! Presentation of results and plenary discussion	All ESRs
~14:00	Concluding remarks	Thomas Langø, SINTEF Frank Lindseth, SINTEF/NTNU
	Social / Dinner (ESRs organise)	ESRs / B.E.E.R. 😊

### Meeting venue NTNU

<http://bit.ly/2v2qZDk>