



## METHODS IN CARDIAC RESEARCH

Tuesday 12 and Wednesday 13 April 2016

At Institute for Experimental Medical Research

Building 7, 4th floor

Oslo University Hospital Ullevål

Course administration: Ravinea Manotheepan and Mathis Korseberg Stokke

### Tuesday April 12

08.30-08.40	Introductory remarks	<i>Mathis Korseberg Stokke</i>
08.40-09.00	Cardiac translational research - from bench to bedside	<i>Ivar Sjaastad</i>
<b>Part I:</b>	<b>Methods in Molecular Biology</b>	
09.05-09.20	Gene expression in the heart: Quantitative PCR	<i>Ulla Enger</i>
09.25-09.40	Microarray/RNA sequencing	<i>Ståle Nygård</i>
09.45-10.00	Proteins: Separation, purification and quantification	<i>Per Kristian Lunde</i>
<b>10.00-10.15</b>	<b>Coffee break</b>	
10.15-10.30	Protein-protein interactions	<i>Cathrine Carlson</i>
10.35-10.50	Detection of cyclic nucleotides and protein-protein interactions: FRET in cardiac research	<i>Kjetil Wessel Andressen</i>
10.55-11.10	Protein localization: FACS	<i>Andreas Romaine</i>
11.15-12.10	<b>Practical Demonstration 1: Methods in Molecular biology</b>	
<b>12.15-12.45</b>	<b>Free lunch at Ullevål hotell</b>	
<b>Part II:</b>	<b>Cardiac Function and Phenotyping in Small Animals</b>	
13.00-13.15	The isolated perfused heart: Langendorff preparation	<i>Kåre-Olav Stensløkken</i>
13.20-13.35	Cardiac imaging techniques for small animals	<i>Magnus Aronsen</i>
13.40-13.55	Hemodynamic measurements in small animals	<i>Håvard Attramadal</i>
14.00-14.15	Exercise training and testing of small animals	<i>Ravinea Manotheepan</i>
<b>14.15-14.30</b>	<b>Coffee break</b>	
14.30-15.30	<b>Practical Demonstration 2: Large Animal Surgery in Cardiac Research</b>	
<b>15.30</b>	<b>End of day 1</b>	



## Wednesday April 13

### Part III: Methods in Cardiac Cellular Biology

- 08.30-09:15 Imaging techniques for assessment of cardiomyocyte structure and function: Wide-field and confocal microscopy; Super resolution imaging; and electron microscopy. *William Louch, Terje Kolstad, David Lipsett*
- 09.20-09.35 Assessment of cellular electrophysiology: Patch-clamp technique *Jonas Skogestad*

### 09.40-10.40 Practical Demonstration 3: Methods in Cardiac Cellular Biology

#### 10.40-10.50 Coffee break

- 10.50-11.05 Cell cultures in cardiac research *Mari Strand*
- 11.10-11.25 Gene modified mice in cardiac research *Ida Gjervold Lunde*

#### 11.30-12.00 Free lunch at Ullevål Hotel

### 12.15-13.15 Practical Demonstration 4: Assessment of Cardiac Function in Small Animals

### Part IV: Imaging Techniques in Cardiac Clinical Research

- 13.45-14.15 MRI and CT, SPECT and PET in evaluation of cardiac function *Einar Hopp, Anders Hodt, Anne Günther*
- 14.20-14.35 Echocardiography in research and clinical use *Thomas von Lueder*
- 14.40-15.00 Cardiac translational research – from bedside to bench *Ingebjørg Seljeflot*

#### 15.00-15.05 Coffee break

#### 15.05 Course Test

#### 16.00 Course end



## Lecturers

Andressen, Kjetil Wessel	Research Scientist, Dep of Pharmacology, UoO
Aronsen, Magnus	PhD student, IEMR, UuO/OUH
Attramadal, Håvard	Professor, Inst. for Surgical Research, OUH
Carlson, Cathrine	Research Scientist, IEMR, OUH/UoO
Enger, Ulla	Research Associate, IEMR, OUH/UoO
Günther, Anne	Senior consultant, Dep of Radiology and Nuclear Med, OUH
Hopp, Einar	Senior consultant, Dep of Radiology and Nuclear Med, OUH
Hodt, Anders	Senior consultant, Dep of Radiology and Nuclear Med, OUH
Kolstad, Terje	PhD student, IEMR, OUH/UoO
Lipsett, David	PhD student, IEMR, OUH/UoO
Louch, William E.	Professor, IEMR, UoO/OUH
von Lueder, Thomas G.	Consultant Cardiologist, Dep of Cardiology, OUH
Lunde, Ida Gjervold	Postdoctoral fellow, IEMR, OUH/UoO
Lunde, Per-Kristian	Research Scientist, IEMR, OUH/UoO
Manotheepan, Ravinea	PhD student, IEMR, OUH/UoO
Nygård, Ståle	Postdoctoral fellow, IEMR, OUH/UoO
Romaine, Andreas	PhD student, IEMR, OUH/UoO
Seljeflot, Ingebjørg	Professor, Center for Clinical Heart Res., Dep of Cardiology, OUH
Sjaastad, Ivar	Professor, IEMR, UoO/OUH
Skogestad, Jonas	Medical Research Curriculum Student, IEMR, OUH/UoO
Stensløyken, Kåre-Olav	Professor, IMB, UoO
Stokke, Mathis Korseberg	Physician in training, LDS and Postdoctoral fellow, IEMR, UoO/OUH
Strand, Mari	PhD student, IEMR, OUH/UoO

*IEMR = Institute for Experimental Medical Research*

*IMB = Institute of Medical Basic Sciences*

*ISR = Institute for Surgical Research*

*LDS = Lovisenberg Diakonale Hospital*

*OUH = Oslo University Hospital*

*UoO = University of Oslo*