

Monday	Tuesday	Wednesday	Thursday	Friday
9:15 Welcome & Introduction Introduction systems medicine	9:00 Generation of omics data – view from the laboratory	9:30-16.30 Visit of Cardiology department, molecular & biomarker laboratory, cohort	9:00 Bringing it all together - Omics data, experimental data bioinformatics/statistics & clinics How to extract important information Resume, questions & facts	9:00 - end “HCHS meets COME - Scientific insights into systems medicine” Hamburg City Health Study public open-day events
9:30 Disease characteristics & Biomarkers Basics on Cardiovascular Disease, Myocardial Infarction, Heart Failure & Atrial Fibrillation	9:30 Assessing the functional role of candidate genes- molecular & animal models	Group I: Clinic I: ECG & EPU (AF) Clinic II: HF unit & echo (HF) Clinic III: Emergency room, chest pain unit & catheter laboratory (MI)		
10:30-10:45 Break	10:15-10:45 Break		10:15-10:30 Break	
10:45 Modern epidemiology in cardiovascular disease – useful for systems medicine	10:45 Statistics: machine-learning approaches & random forests. How to deal with biomarkers	Lab I: Omics analyses & sequencing, molecular laboratory Lab II: Biomarker measurements	10:30 – 11:30 Big data – ethical & legal aspects	
<ul style="list-style-type: none"> 11:30-12:30 Introduction in OMICS , bioinformatics & data analyses <ul style="list-style-type: none"> Quality control of data (HCHS) Analyses of sequencing & GWE data Bioinformatics for data interpretation Assessment of regulatory regions 		Epidemiology I: Visit of cohort studies & biobanks: Hamburg City Health Study & Clinical Cohorts	11.30-13.00 Discussion on challenges & pitfalls in systems medicine Experience in meeting & working with clinicians	Presentation of systems medicine approaches & experience of the Summer School by COME participants as posters, talks & discussions with the public
12:30-14.00h Flexible lunch	12:00-13:00 Lunch	13:30-14:30 Lunch	12.00-14.00 Flexible lunch	
12:30 – 16:30 Group work MI, AF, HF	13:00 - 14.30 Implementation/Translation of systems medicine into clinical care <ul style="list-style-type: none"> Biobanks and biomarkers Discrimination, calibration, reclassification Clinical Trials 	Group II 1. Lab I+II 2. Epidemiology 3. Clinic I,II,III Group III 1. Epidemiology 2. Clinic I,II,III 3. Lab I+II	12:00 – 17:00 Group work MI, AF, HF Preparation of presentations	
16:30 – 18.00 Podium Discussion: How I got to systems medicine (examples from biologists, clinicians, & bioinformaticians)	14:30-15:00 Break	16.30-17.00 Break	17:00 – 17:30 Break	
18:00 Dinner	15.00-17.30 Group work MI, AF, HF	17:00 Lecture: Systems Medicine approaches in the pharma industry. Commercial aspects		
	17:30 Joint lecture UHRC, CVRC, DZHK	18.30 Barbecue	17:30 Event & Dinner	
	18:15 Dinner			
Permanent poster presentations	Permanent poster presentations	Permanent poster presentations	Permanent poster presentations	approx. 18:00 End of Summer School