

4th Course on Computational Systems Biology of Cancer: Multi-omics and Machine Learning Approaches
September 27 - October 1, 2021 hours are in CEST zone

VIRTUAL Institut Curie Training Unit International Course FEBS-SUPPORTED EVENT

Monday, September 27th Session 1: Machine learning in prior knowledge applications for multi-omics data analysis		
Chair: TBA		
08:50	TBA	Welcome and opening remarks by organisers (Plenary Hall)
09:00		
09:00	Emmanuel Barillot Institut Curie, FR	Didactic introductory lecture: Open challenges for computational biologists in oncology (Plenary Hall)
10:00		
10:00	JP Vert Google, FR	Didactic introductory lecture: Approaches for big data analysis in cancer research (Plenary Hall)
11:00		
11:00		Coffee break / Meet the speaker (Parallel sessions: Meeting rooms A-C)
11:30		
11:30	Talks selected from abstracts	15 minutes/presentation (Parallel sessions: Plenary Hall, Meeting room A)
12:30		
12:30		Lunch
13:30		
Monday, September 27th Session 2: Network-based methods for multi-omics data interpretation		
Chair: TBA		
13:30	Julio Saez-Rodriguez EMBL-EBI, DE	Causal integration of multi-omics data with prior knowledge to generate mechanistic hypotheses (Plenary Hall)
14:30		
14:30	Magnus Rattray Manchester, UK	Gaussian process methods for modelling temporal and spatial omics data (Plenary Hall)
15:30		
15:30	Joaquin Dopazo IBIS, ES	Mechanistic modeling and machine learning for the discovery of therapeutic targets in cancer (Plenary Hall)
16:30		
16:30		Coffee break / Meet the speaker (Parallel sessions: Meeting rooms A-C)
17:00		
17:00	Talks selected from abstracts	15 minutes/presentation (Parallel sessions: Plenary Hall, Meeting room A)
18:00		
18:00		Poster session (Parallel sessions: Poster rooms 1-8)
19:00		
19:00		Welcome cocktail / Virtual Apéro (Parallel sessions: Meeting rooms A-C, Poster rooms 1-2)
20:30		

Tuesday, September 28th Session 3: Patient stratification and disease classification using Artificial Intelligence methods (1)		
Chair: TBA		
09:00	Anais Baudot MMG, Marseille, FR	Network-based heterogeneous data integration for human diseases (Plenary Hall)
10:00		
10:00	Olivier Ayrault Institut Curie, FR	Using quantitative proteomics to decipher the biology of medulloblastoma (Plenary Hall)
11:00		
11:00	Lodewyk Wessls The Netherlands Cancer Institute, NL	Drug combination treatment in cancer (Plenary Hall)
12:00		
12:00		Coffee break / Meet the speaker (Parallel sessions: Meeting rooms A-C)
12:30		
12:30		Poster session and Lunch (Parallel sessions: Poster rooms 1-8)
13:30		
Tuesday, September 28th Session 4: Patient stratification and disease classification using Artificial Intelligence methods (2)		
Chair: TBA		
13:30	Carl Herrman BioQuant and Medical Faculty Heidelberg University, DE	TBA
14:30		
14:30	Andrei Zinovyev Institut Curie, FR	The geometry of multi-omics data spaces: applications for cancer research (Plenary Hall)
15:30		
15:30		Coffee break / Meet the speaker (Parallel sessions: Meeting rooms A-C)
16:00		
16:00	Talks selected from abstracts	15 minutes/presentation (Parallel sessions: Plenary Hall, Meeting room A)
17:00		
17:00		Poster session (Parallel sessions: Poster rooms 1-8)
18:00		

Wednesday, September 29th Session 5: Multi-omics data integration in precision medicine		
Chair: TBA		
09:00	Yvan Saeys Inflammation Research Center, VIB, BE	Data Mining and Modelling for Biomedicine (Plenary Hall)
10:00		
10:00	Chloé-Agathe Azencott Institut Curie, FR	Machine learning techniques for multi-modal data analysis (Plenary Hall)
11:00		
11:00		Coffee break / Meet the speaker (Parallel sessions: Meeting rooms A-C)
11:30		
11:30	Talks selected from abstracts	15 minutes/presentation (Parallel sessions: Plenary Hall, Meeting room A)
12:30		
12:30		Lunch
13:30		
Wednesday, September 29th Session 6: Multi-omics data integration in precision medicine		
Chair: TBA		
13:30	Kay Nieselt University of Tübingen, DE	Integrative Transcriptomics: Spatiotemporal Developmental Trajectories Using High-Throughput Single-Cell RNA Sequencing data (Plenary Hall)
14:30		
14:30	Laura Cantini ENS, Paris, FR	Multi-omics data integration: towards a comprehensive view of cancer (Plenary Hall)
15:30		
15:30	Nathalie Vialaneix INRAE, FR	Kernel methods and variable selection for exploratory analysis and multi-omics integration (Plenary Hall)
16:30		
16:30		Coffee break / Meet the speaker (Parallel sessions: Meeting rooms A-C)
17:00		
17:00		Poster session (Parallel sessions: Poster rooms 1-8)
18:00		

Thursday, September 30th Session 7: Treatment response prediction and prognosis using machine learning approaches (1)		
Chair: TBA		
09:00 10:00	Samuel Kaski Aalto University, FI	Improving drug response prediction by integrating multiple data sources: matrix factorization, kernel and network-based approaches (Plenary Hall)
10:00 11:00	Asmund Flobak NTNU, Norway, NO	Clinical decision support for colon cancer by computational cancer signaling simulation and patient-derived spheroid functional validation (Plenary Hall)
11:00 11:30	Coffee break / Meet the speaker (Parallel sessions: Meeting rooms A-C)	
11:30 12:30	Poster session (Parallel sessions: Poster rooms 1-8)	
12:30 13:30	Lunch	
Thursday, September 30th Session 8: Digital pathology		
Chair: TBA		
13:30 14:30	Thomas Walter Institut Curie, FR	Predictive models in computational pathology (Plenary Hall)
14:30 15:30	Joakim Lundeberg SciLifeLab, KTH, SE	Spatial Transcriptomics for Cancer Tissues (Plenary Hall)
15:30 16:00	Coffee break / Meet the speaker (Parallel sessions: Meeting rooms A-C)	
16:00 17:00	Talks selected from abstracts	15 minutes/presentation
17:00 19:00	Master student's journal club	Presentation of milestone papers (Parallel sessions: Meeting rooms A-C)
Friday, October 1st Session 9: Machine learning approaches in bioimaging		
Chair: TBA		
09:00 10:00	Pierre Fillard CSO de Therapixel, FR	Breast Cancer Screening at the Era of Artificial Intelligence: Results of a multi-center, multi-geographic, retrospective study (Plenary Hall)
10:00 11:00	Nikos Paragios CentralSupélec et CEO-CSO de Therapace, FR	AI and medical imaging in pathophysiology (Plenary Hall)
11:00 12:00	Stéphanie Allassonniere Université Paris Descartes, FR	Mixed effect models for the spatio-temporal analysis of manifold valued data: application to cancer treatment followup (Plenary Hall)
12:00 12:30	Meet the speaker (Parallel sessions: Meeting rooms A-C)	
12:30 13:30	Lunch	
Friday, October 1st Session 10: Machine learning approaches in radiomics		
Chair: TBA		
13:30 14:30	Irène Buvat INSERM, Institut Curie, FR	Machine learning methods for analysis of radiomics data in oncology (Plenary Hall)
14:30 15:30	Laure Fournier Université de Paris, FR	Radiomics for cancer imaging (Plenary Hall)
15:30 16:00	Coffee break / Meet the speaker (Parallel sessions: Meeting rooms A-C)	
16:00 17:00	Master student's journal club	Presentation of milestone papers (Parallel sessions: Meeting rooms A-C)
17:00 18:00	Career development workshop	Representatives of academia, pharma, editing bodies and platforms
18:00 18:30	Closing remarks, prizes for presentations and posters (Plenary Hall)	
18:30 19:30	Farewell cocktail / Virtual Apéro (Parallel sessions: Meeting rooms A-C, Poster rooms 1-2)	