

OVERVIEW

Following the very successful Summer Schools in September 2011 and 2012, the Istituto di Ricerca Genetica e Biomedica (CNR-IRGB) and the Centro di Ricerca, Sviluppo e Studi Superiori in Sardegna (CRS4) are organising the 3rd Sardinian Summer School 'Genomic Analysis of Complex and Monogenic Disorders' from **9 – 13 September 2013**.

The aim of this Summer School in Genomics is to cover state-of-the-art theory and practice of the approaches to the identification of the genetic bases of human diseases.

COURSE DESCRIPTION

The programme consists of a series of lectures and practical sessions which are specific to the theme of the Summer School. The course is designed to encourage the maximum possible interaction among lecturers and students.

The lectures are intended to give conceptual overviews of modern approaches to study genetic variation and to apply this information to different areas of research, in particular the detection of genetic variants associated with complex and monogenic traits. Special emphasis will be given to recent progress resulting from massive parallel sequencing strategies and their integration with microarrays data.

The practical sessions (workshops) are intended to give more applicative tools on the different topics covered during the course; in particular a discussion of different study designs, methods to analyse high flow microarray data for GWAS, analysis of low pass and deep coverage whole genome DNA sequencing data, methods for statistical imputation, analysis of exome sequencing data, quantitative and qualitative analysis of the transcriptome, epigenome and other related issues. The workshops will consist of theoretical demonstrations as well as practical tasks carried out using a variety of computer programs.

Course Scientific Directors: Francesco Cucca, Marcella Devoto

Lectures		Workshops	
Gonalo Abecasis	Low Pass Sequencing	Gonalo Abecasis & Carlo Sidore	Low Pass Sequencing
Gonalo Abecasis	Association studies including QTL	Marcella Devoto & TBA	Study Design, Power Analysis, QC
Myles Axton	Increasing the impact of your publications	Marcella Devoto & TBA	GWAS including Imputation
Francesco Cucca	Genetics of immune cell levels	Stephen Montgomery	Expression and eQTL
Marcella Devoto	GWAS Overview	John Novembre	Population Genetics
Thomas Meitinger	Sequencing in Complex Traits		
Stephen Montgomery	Expression and eQTL		
John Novembre	Population Genetics		
Osama Ohara	Post-GWAS animal models		
Stephen Sawcer	Genetics of Multiple Sclerosis		
David Schlessinger	Developmental Genetics		
Nicole Soranzo	Next-gen association of cardiometabolic traits		
John Todd	Genes and Mechanisms in T1D		

WHO SHOULD ATTEND

Graduate students, post-doctoral researchers, and clinical researchers who wish to learn more about or move into the complex genomics field. Attendees should have background knowledge on most of the topics presented during the course. The ability to work in a Linux environment is a prerequisite for attending the workshops. English proficiency is required for all Summer School lectures and workshops. The course is funded by the Regional Sardinian government and will be free of charge for all attendees.

Application deadline: 15 August 2013

Local Organizing Committee: Roman Tirler and CRS4 staff

For additional course information and course application please visit the course website.

LOCATION

Polaris Technology Park
Loc. Piscinamanna
09010 Pula (CA), Italy

CONTACT

info_sc2013@crs4.it

WEBSITE

<http://www.crs4.it/SC2013>



3rd Sardinian Summer School - September 2013

Preliminary Schedule

	Time		Lecturer	Title
Monday-09	09:00 - 10:00	Lecture 1-1	M. Devoto	GWAS Overview
	10:00 - 11:00	Lecture 1-2	G. Abecasis	Association studies including QTL
	11:00 - 11:30	Coffee break		
	11:30 - 12:30	Lecture 1-3	O. Ohara	Post-GWAS animal models
	12:30 - 14:00	Lunch break		
	14:00 - 15:30	Workshop 1-1	M. Devoto and TBA	Study design, power analysis, Quality Control
	15:30 - 16:00	Coffee break		
	16:00 - 17:30	Workshop 1-2	M. Devoto and TBA	GWAS including imputation
Tuesday-10	09:00 - 10:00	Lecture 2-1	G. Abecasis	Low Pass Sequencing
	10:00 - 11:00	Lecture 2-2	TBA	Sequencing
	11:00 - 11:30	Coffee break		
	11:30 - 12:30	Lecture 2-3	T. Meitinger	Sequencing in complex traits
	12:30 - 14:00	Lunch break		
	14:00 - 15:30	Workshop 2-1	G. Abecasis and C. Sidore	Sequencing
	15:30 - 16:00	Coffee break		
	16:00 - 17:30	Workshop 2-2	TBA	Sequencing
Wednesday-11	09:00 - 10:00	Lecture 3-1	F. Cucca	Genetics of immune cell levels
	10:00 - 11:00	Lecture 3-2	N. Soranzo	Next-gen association of cardiometabolic traits
	11:00 - 11:30	Coffee break		
	11:30 - 12:30	Lecture 3-3	D. Schlessinger	Developmental Genetics
	12:00 - 14:00	Lunch break		
	Free Afternoon			
Thursday-12	09:00 - 10:00	Lecture 4-1	S. Montgomery	Expression and eQTL
	10:00 - 11:00	Lecture 4-2	J. Novembre	Population Genetics
	11:00 - 11:30	Coffee break		
	11:30 - 12:30	Lecture 4-3	M. Axton	Increasing the impact of your publications
	12:30 - 14:00	Lunch break		
	14:00 - 15:30	Workshop 4-1	S. Montgomery	RNASeq
	15:30 - 16:00	Coffee break		
	16:00 - 17:30	Workshop 4-2	J. Novembre	Population Genetics
Friday-13	09:00 - 10:00	Lecture 5-1	L. Luzzatto	Positive natural selection and malaria
	10:00 - 11:00	Lecture 5-2	S. Sawcer	Genetics of multiple sclerosis
	11:00 - 11:30	Coffee break		
	11:30 - 12:30	Lecture 5-3	J. Todd	Genes and Mechanisms in T1D
	12:30 - 14:00	Lunch break		
	Adjourn			