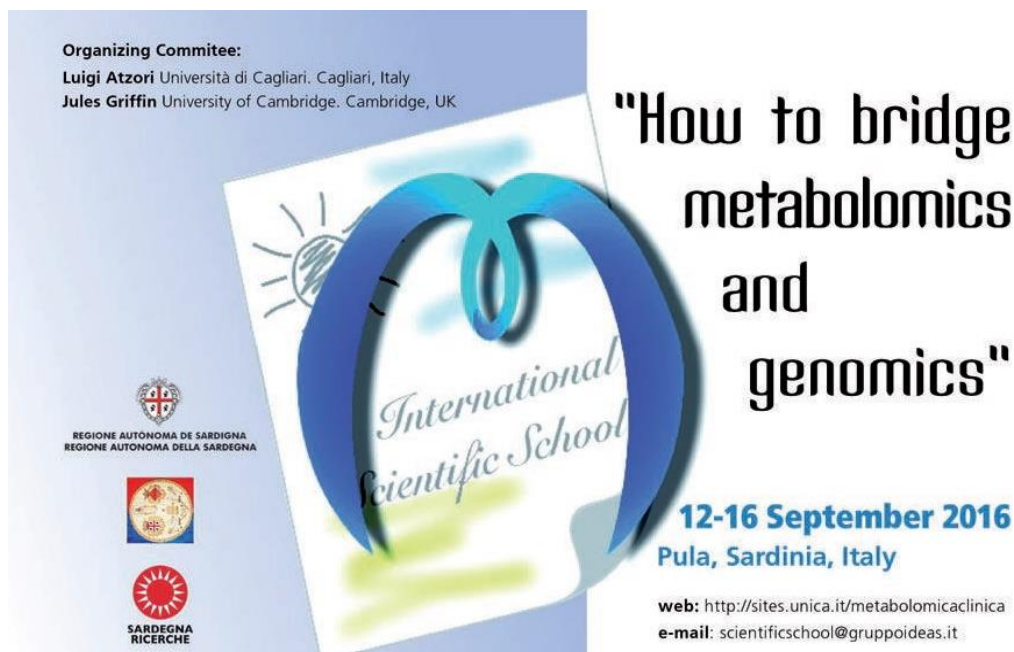




## 2<sup>nd</sup> Metabolomics Sardinian Scientific School "How to bridge metabolomics and genomics" 12<sup>th</sup> – 16<sup>th</sup> september 2016



### Course Program

The development of different -omics is based on the use of multiple analytical platforms and statistical techniques. Nowadays, metabolomics is a well-established -omics science. This systematic study of metabolites is approaching new challenges (e.g. multilevel analysis, batch correction, pathway analysis) plus the need of being integrated with other -omics. In spite of been all -omics part of a system biology approach, the results are often treated in an individual contest (problems to integrate the data?).

Aim of the present School will be to teach and discuss challenging analytical aspects with special focus on the integration of metabolomics and genomics data.

This 2nd Scientific School on Metabolomics in Sardinia is targeted to researchers at an early stage in their career, from Biological Sciences, Health Sciences and other different background (including Bioinformatics and Mathematics) who are interested in learning about both technical and cheminformatic tools to integrate metabolomics data.

#### Venue

Polaris Technology Park, Building 2 - Loc. Piscinamanna, 09010 Pula (CA), Italy.

#### Registration Fee:

FREE OF CHARGE FOR ALL ATTENDEES. Selection based on CV and motivation letter

**Deadline for application:** 20 August 2016

**Course Organizer:** Luigi Atzori [latzori@unica.it](mailto:latzori@unica.it)

**Scientific School Secretariat:** [scientificschool@gruppoidideas.it](mailto:scientificschool@gruppoidideas.it)

For timetable updates, program, registration and info please visit the website:

<http://sites.unica.it/metabolomicaclinica/events/scientific-school-2016/>



## Faculty – Main Topics

- **Atzori Luigi**, Università Cagliari, Cagliari, Italy  
*“Microbiota and metabolomics integrations in IBD”*
- **Brennan Lorraine**, UCD, Dublin, Eire  
*“Personalized nutrition”*
- **Charfeddine Cherine**, Institut Supérieur de Biotechnologies à Sidi Thabet, Tunisi  
*“From basic genetic studies to metabolomics: What have we learned from the investigation of consanguineous”*
- **Donati Claudio**, Fondazione Edmund Mach, Trento, Italy  
*“Explaining diversity in metagenomic datasets”*
- **Franceschi Pietro**, Fondazione Edmund Mach, Trento, Italy  
*“MetaDB: a Data Processing Workflow in Untargeted MS-Based Metabolomics Experiments”*
- **Griffin Jules**, University of Cambridge, Cambridge, UK  
*“Translating big data from genes and metabolites into molecular knowledge: Using metabolomics at the population level”*
- **Keun Hector**, Imperial College, London, UK  
*“Omics integration in cancer”*
- **Jourdan Fabien**, INRA, Toulouse, France  
*“MetExplore: a web server to link metabolomic experiments and genome-scale metabolic networks”*
- **Paris Debora**, CNR, Napoli, Italy  
*“NMR data quantification”*
- **Rodriguez-Tomé Patricia**, Nurideas, Cagliari, Italy  
*“How to handle an “-omics” lab”*
- **Stocchero Matteo**, S-IN, Vicenza, Italy  
*“Data Fusion and data integration: Tips and tricks”*
- **Thévenot Etienne**, CEA, LIST, MetaboHUB, Saclay, France  
*“The Workflow4Metabolomics (W4M) online infrastructure for omics analysis with Galaxy”*
- **Weljie Aalim**, University of Pennsylvania, USA  
*“-Omics and chronobiology”*
- **Wishart David**, University of Alberta, Canada  
*“Is Cancer a Genetic or a Metabolic Disease?”*
- **Zampieri Mattia**, Swiss Federal Institute of Technology Zurich ETH, Zurich, Switzerland  
*“Generating Molecular Hypotheses from Dynamic Metabolomics Data”*

**Daily hands-on sections, poster and oral presentations from participants**



## Tentative Timetable

### Monday, September 12

<b>Until 15.00</b>	Registration		
<b>15.00-16.00</b>	Key presentation	Is Cancer a Genetic Disease or a Metabolic Disease?	<b>David Wishart</b>
<b>16.00-17.00</b>	Key presentation	Metabolomics as a tool in nutritional research	<b>Lorraine Brennan</b>
<b>17.00-18.00</b>	Poster presentation by students		
<b>20.00</b>	Welcome party		

### Tuesday, September 13

<b>9.00-9.45</b>	Scientific Section	Using metabolomics to identify disease: towards precision new markers	<b>Jules Griffin</b>
<b>9.45-10.30</b>	Scientific Section	Statistical methods for biomarkers discovery	<b>Etienne Thevenot</b>
<b>10.30-11.15</b>	Scientific Section	What you need to know in Metabolomics	<b>David Wishart</b>
<b>11.15-11.30</b>	Coffee break		
<b>11.30-12.45</b>	Scientific Section	The use of a metabolomic approach to identify novel biomarkers of dietary intake	<b>Lorraine Brennan</b>
<b>12.45-13.30</b>	Scientific Section	Generating Molecular Hypotheses from Dynamic Metabolomics data	<b>Mattia Zampieri</b>
<b>13.30-14.30</b>	Lunch		
<b>14.30-16.30</b>	Workshop	MetExplore: a web server to link metabolomic experiments and genome-scale metabolic networks	<b>Fabien Jourden</b>
<b>16.30-17.30</b>	Workshop	Sample Preparation for Mass Spectrometry Imaging	<b>Pietro Franceschi</b>

### Wednesday, September 14

<b>9.00-9.45</b>	Scientific Section	Chronobiology metabolomics: what have we learned from metabolomics studies of the molecular clock?	<b>Aalim Welije</b>
<b>9.45-10.30</b>	Scientific Section	Explaining diversity in metagenomic datasets. What metabolomic studies need to know	<b>Claudio Donati</b>
<b>10.30-11.15</b>	Scientific Section	Metabolic networks usage to predict metabolic fluxes	<b>Fabien Jourden</b>
<b>11.15-11.30</b>	Coffee break		
<b>11.30-12.45</b>	Scientific Section	Metabolism adaptation in Bacteria	<b>Mattia Zampieri</b>
<b>12.45-13.30</b>	Scientific Section	From basic genetic studies to metabolomics: What have we learned from the investigation of consanguineous populations?	<b>Cherine Charfeddine</b>
<b>13.30-14.30</b>	Lunch		
<b>14.30-15.30</b>	Workshop	How to handle a -omics Lab	<b>Patricia Rodriguez-Tomé</b>
<b>15.30-16.30</b>	Workshop	Explaining diversity in metagenomic datasets. What metabolomic studies need to know	<b>Claudio Donati</b>
<b>16.30-17.30</b>	Workshop	MetaDB a Data Processing Workflow in Untargeted MS-Based Metabolomics Experiments	<b>Pietro Franceschi</b>



### Thursday, September 15

<b>9.00-9.45</b>	Scientific Section	Integration of omics data in cancer	<b>Hector Keun</b>
<b>9.45-10.30</b>	Scientific Section	NMR data quantification	<b>Debora Paris</b>
<b>10.30-11.15</b>	Scientific Section	Lessons in analysis of time series data from chronobiology metabolomics studies	<b>Aalim Weljie</b>
<b>11.15-11.30</b>	Coffee break		
<b>11.30-12.45</b>	Scientific Section	Data Fusion and data integration: Tips and tricks	<b>Matteo Stocchero</b>
<b>12.45-13.30</b>	Scientific Section	Metabolic networks usage to predict metabolic fluxes	<b>Fabien Jourden</b>
<b>13.30-14.30</b>	Lunch		
<b>14.30-15.30</b>	Workshop	The Workflow4Metabolomics (W4M) online infrastructure for omics analysis with Galaxy Hands-on session using W4M to build and run statistical workflows	<b>Etienne Thevenot</b>
<b>15.30-16.30</b>	Workshop	Multivariate statistical analysis	<b>Matteo Stocchero</b>
<b>16.30-17.30</b>	Workshop	To be announced	
<b>17.30</b>	Visit to Nora Social Dinner		

### Friday, September 16

<b>9.00-9.30</b>	Scientific Section	Biocrates ring trial	<b>Hector Keun</b>
<b>9.30-10.00</b>	Scientific Section	Microbiota and metabolomics integrations in IBD	<b>Luigi Atzori</b>
<b>10.00-10.45</b>	Presentations by Students		
<b>10.45-11.15</b>	Coffee break		
<b>11.15-12.15</b>	Key presentation	Translating big data from genes and metabolites into molecular knowledge: Using metabolomics at the population level	<b>Jules Griffin</b>
<b>12.15</b>	Conclusions		
<b>13.30-14.30</b>	Lunch		



## Language

English is the official language of the school.

## Venue

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

The Technology Park is located in the territory of Pula, in the hinterland of Cagliari, close to the South-Western coast of Sardinia. Its grounds cover an area of 160 ha, set in a nature park at the foot of the Sulcis mountain range.

<http://www.sardegna ricerche.it/attivita/parcotecnologico/sedi/>

## Target Audience and Applications

The course is funded by the Regional Sardinian government and open to 25 participants. **Registration will be free of charge for all attendees.** The Scientific School is targeted to researchers at an early stage in their career, from Biological Sciences, Health Sciences and other different background (including bioinformatics and mathematics) who are interested in learning about both technical and cheminformatic tools to integrate metabolomics data.

Selection will be based on CV and a letter stating the motivations for attending the course and future research plans of candidates. A letter of reference from the current supervisor must also be attached to the application.

Applications will be evaluated and accepted in order of arrival.

Registration includes course material, welcome party, lunches and coffee breaks during the school time, visit to Nora with social dinner (not accommodation expenses). During the school, for selected participants contribution or reimbursement will be considered.

## DEADLINE FOR APPLICATION: 20 AUGUST 2016

## Accommodation

Faculty and students will stay at Hotel located near the seaside, a few kilometres from the Polaris Technology Park. A very special rate has been agreed with the Local Organizing Committee. All info on the website.

## Organizing Committee

**Atzori Luigi**, Università Cagliari, Cagliari, Italy

**Griffin Jules**, University of Cambridge, Cambridge, UK

**Pieroni Enrico**, CRS4, Pula, Italy

**Rodriguez-Tomé Patricia**, Nurideas, Cagliari, Italy

## Scientific School Secretariat – Info

e-mail: [scientificschool@gruppoidideas.it](mailto:scientificschool@gruppoidideas.it)

web: <http://sites.unica.it/metabolomicaclinica/events/scientific-school-2016/>

Click “Like” and follow us on facebook: [Metabolomics - UNICA 2016](#)

You can find all the information about Scientific School 2016 on the webpage, but please do not hesitate to contact the Secretariat if you require any additional information or assistance.

Please address all correspondence to: [scientificschool@gruppoidideas.it](mailto:scientificschool@gruppoidideas.it)