

Cagliari, 3-5 ottobre 2018

# **The ELIXIR Italy Training Platform: supporting researchers and professionals in acquiring specialized computational and data management skills**

Allegra Via

Institute of Molecular Biology and Pathology (IBPM)

National Research Council of Italy (CNR)

Elixir Italy Training Platform





## A distributed infrastructure for life-science data

- ELIXIR is an intergovernmental organisation that brings together life science resources from across Europe

- databases
- software tools
- training materials
- cloud storage
- supercomputers





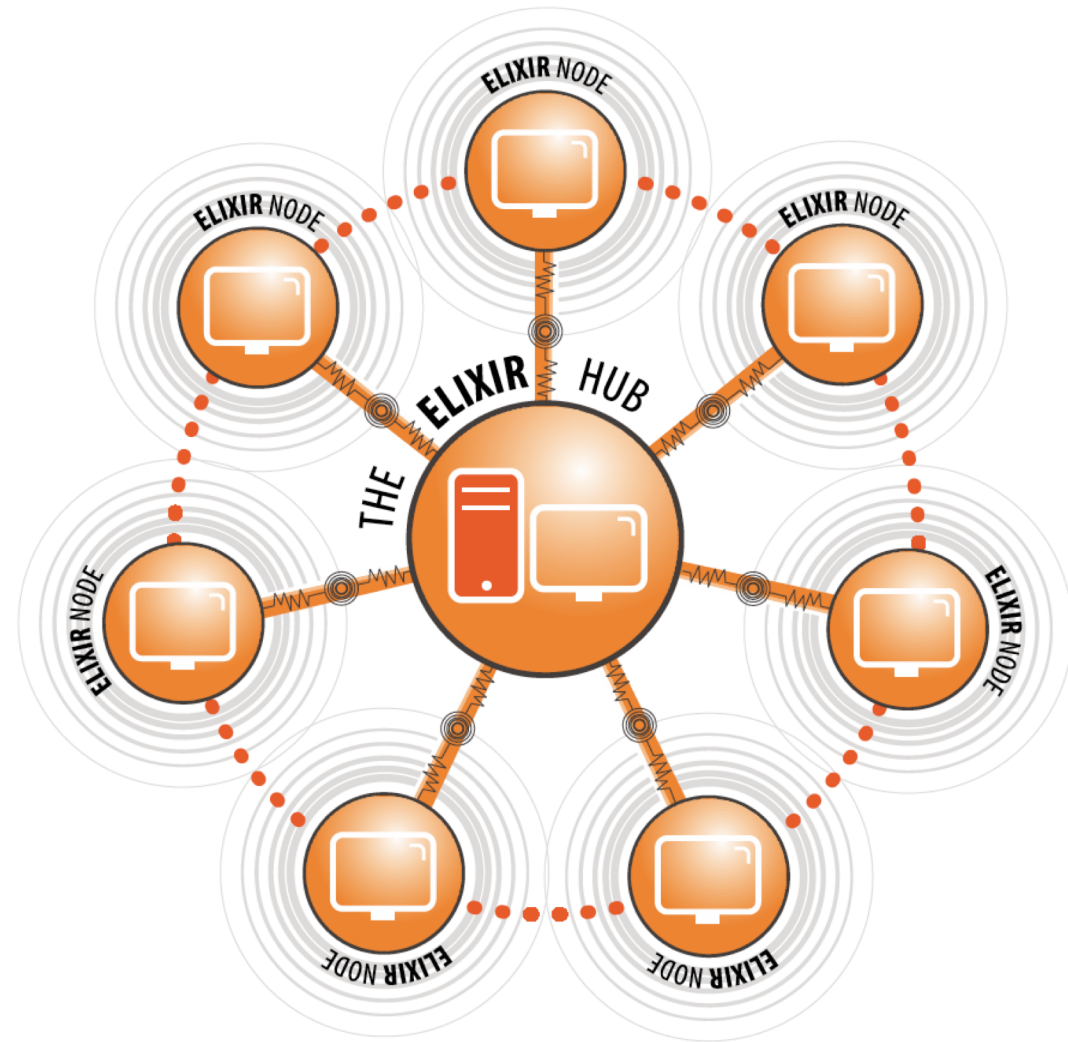
**ELIXIR's activities are divided into five areas called 'Platforms'**

# A distributed infrastructure to scale with the challenge

ELIXIR data  
infrastructure for  
Europe's life science  
research sector

ELIXIR Nodes build local  
bioinformatics capacity  
throughout Europe

ELIXIR Nodes build on  
national strengths and  
priorities





# An ELIXIR Node is a network of research institutes within a member country

|   |   |   |  |
|---|---|---|--|
|  EMBL (June 2013)                        |  UK (Sept 2013)        |  Sweden (Sept 2013)      |  Switzerland (Oct 2013)   |
|  Czech Republic (Nov 2013)               |  Estonia (Dec 2013)    |  Norway (Jan 2014)       |  Netherlands (Feb 2014)   |
|  Denmark (Mar 2014)                      |  Israel (May 2014)     |  Portugal (July 2014)    |  Finland (Sept 2014)      |
|  France (Oct 2015 as Provisional Member) |  Belgium (Nov 2015)    |  Italy (Jan 2016)        |  Slovenia (Feb 2016)      |
|  Luxembourg (July 2016)                |  Ireland (July 2016) |  Germany (August 2016) |  Hungary (January 2017) |
|  Spain (Oct 2017)                      |  Greece              |   |  |



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IIB

**ELIXIR** is a European Research Infrastructure for biological data which primary objective is to support research in the field of “life sciences” and their translational activities to medicine, environment , biotechnological industries and society.

**ELIXIR** is organized as a distributed infrastructure constituted by several nodes (the “ELIXIR Nodes”), one for each Member State, and each Node is hosted by one or more center of excellence for bioinformatics located throughout Europe . Nodes are connected to a central hub ( ‘ELIXIR-Hub’), which is located at Hinxton (UK) in the “Wellcome Genome Campus” that also hosts the EMBL’s European Bioinformatics Institute (EMBL-EBI).

The Italian Node of **ELIXIR** is coordinated by the National Research Council and currently includes 17 partners including research institutes, universities and technological institutions.

ELIXIR-IIB, which has the ambition to raise an Italian Infrastructure for Bioinformatics (IIB) distributed across multiple centers, aims to bring together all the Italian researchers working in the field of bioinformatics, encouraging the exchange and development of skills, integrating the various Italian bioinformatics resources that share international scientific recognition and are publicly available, and to contribute to their integration within the European infrastructure.

Another primary objective of ELIXIR-IIB is to organize training activities, both at basic and advanced levels, covering various application fields of Bioinformatics in order to encourage the training of young bioinformaticians, since demand for them is booming both at the national and international levels.

Keep in touch with us subscribing to the **ELIXIR-IIB ML**!

| < October 2018 > |     |     |     |     |     |     |
|------------------|-----|-----|-----|-----|-----|-----|
| MON              | TUE | WED | THU | FRI | SAT | SUN |
| 1                | 2   | 3   | 4   | 5   | 6   | 7   |
| 8                | 9   | 10  | 11  | 12  | 13  | 14  |
| 15               | 16  | 17  | 18  | 19  | 20  | 21  |
| 22               | 23  | 24  | 25  | 26  | 27  | 28  |
| 29               | 30  | 31  | 1   | 2   | 3   | 4   |

THURSDAY 04 ▶

No current events



elixir-italy.org

**IIB** INFRASTRUTTURA ITALIANA DI BIOINFORMATICA

**elixir** ITALY

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IIB > STRUCTURE > MEMBERS

## MEMBERS

IIB is composed by 17 Italian research and technological Institutions. To learn more click on the links in this page.

- ▶ CINECA
- ▶ CRS4
- ▶ GARR
- ▶ Università della Tuscia
- ▶ Università di Bologna
- ▶ Università di Milano
- ▶ Università di Padova
- ▶ Università di Roma - La Sapienza
- ▶ Università di Salerno
- ▶ CNR
- ▶ Fondazione Edmund Mach
- ▶ INFN
- ▶ Università di Bari
- ▶ Università di Firenze
- ▶ Università di Milano - Bicocca
- ▶ Università di Parma
- ▶ Università di Roma - Tor Vergata

## CONTACTS

**JRU Manager – Head of Node**  
Graziano Pesole  
Email: [g.pesole@ibiom.cnr.it](mailto:g.pesole@ibiom.cnr.it)

**Technical Coordinator**  
Federico Zambelli  
Email: [fzambelli@ibiom.cnr.it](mailto:fzambelli@ibiom.cnr.it)

**Training Coordinator**  
Allegra Via  
Email: [allegra.via@cnr.it](mailto:allegra.via@cnr.it)

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**CONTACTS**

elixir-italy.org





The screenshot shows the elixir-italy.org website. The browser address bar displays "elixir-italy.org". The website header includes the IIB logo (INFRASTRUTTURA ITALIANA DI BIOINFORMATICA) and the elixir ITALY logo. A search bar is located in the top right corner. Below the header is a navigation menu with links: HOME, STRUCTURE, SERVICES, NEWS, EVENTS, TRAINING, PROJECTS, CONTACTS, and LOGIN. The main content area is titled "MEMBERS" and contains a list of 17 Italian research and technological institutions. A red circle highlights this list. To the right of the list is a "CONTACTS" section with information about the JRU Manager, Technical Coordinator, and Training Coordinator. The footer includes the IIB logo, elixir ITALY logo, and links to various sections: STRUCTURE (Members, Organization, People), SERVICES (HPC@CINECA, INFN Cloud Services, Vespucci), NEWS, EVENTS, TRAINING, PROJECTS (ELIXIR-EXCELERATE, INDIGO-DataCloud), and CONTACTS.

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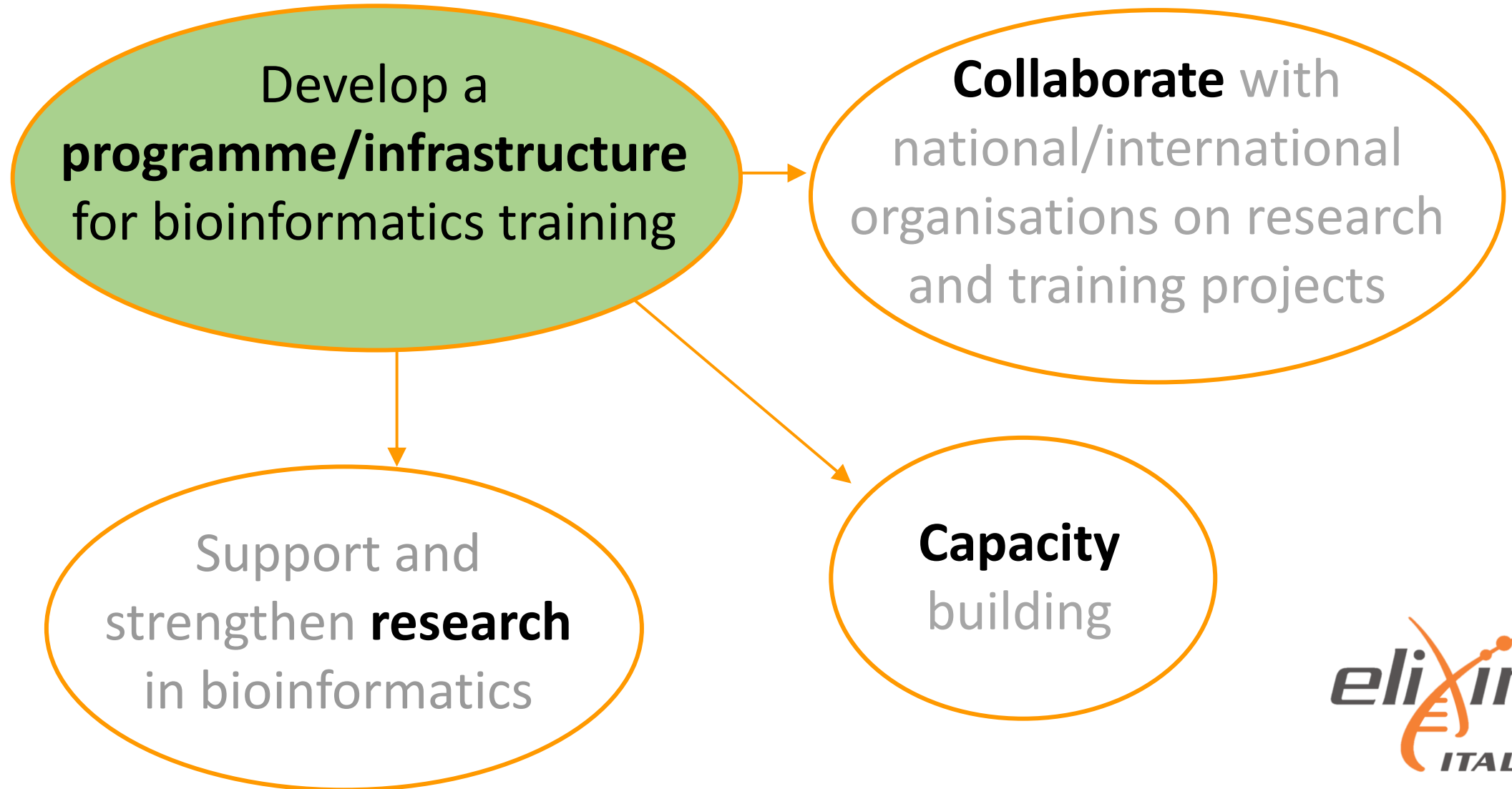


Cagliari, 3-5 ottobre 2018

# **The ELIXIR Italy Training Platform: supporting researchers and professionals in acquiring specialized computational and data management skills**



# Goals of the ELIXIR Italy Training Platform





# Which issues?

- Identify training needs
- Diversity of the audience
  - End users (life scientists, medical doctors, bioinformaticians)
  - Developers
  - Data scientists
- Training capacity (instructors)
- Course design and (FAIR) materials development
- Community building

# Which issues?

- Course organisation
  - Hosting institution
  - Local organiser(s)
  - Budget
  - Identify instructors
  - Train instructors (ensure they comply with our pedagogical model)
  - Training (IT) room
  - IT support (VMs / Cloud / Containers)

# Which (pedagogical) issues?

- Novices
- Adult learning (andragogy)
- Computational & data management skills to NON computational scientists
- HPC and parallel computing to bioinformaticians
- Developers
- Train the Trainer (including VM, Containers & Cloud in training)

Our Training model

Organisational model

Pedagogical model



Our Training model

Organisational model

Pedagogical model

- Training team

# The ELIXIR Italy Training team



Allegra Via  
IBPM-CNR



Loredana Le Pera  
IBIOM-CNR



Vincenza Colonna  
IGB-CNR



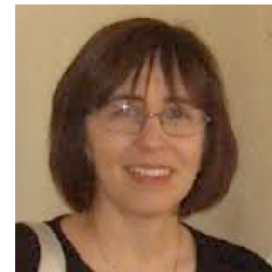
Francesca De Leo  
IBBE-CNR



Luana Licata  
University of  
Rome "Tor  
Vergata"



Ivan Micetic  
University of  
Padua



Anna Marabotti  
University of Salerno



## Our Training model

### Organisational model

- Training team
- Surveys

### Pedagogical model

## Our Training model

### Organisational model

- Training team
- Surveys
- Guidelines
  - ETT-organised courses
  - Self-organised courses

### Pedagogical model



## Our Training model

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- Training team
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  - Self-organised courses
- ELIXIR-IT community of trainers

# ELIXIR-IIB Training Platform

[Training Courses](#) [All events 2018](#) [Trainers](#) [The Training Team](#) [Et Cetera](#) [Archive](#)

## Trainers

This is a list of instructors and helpers who taught in ELIXIR-IIB courses:

**Rossano Atzeni** [CRS4, Pula (Cagliari), IT]

**Chiara Batini** [Dept. of Health Sciences, University of Leicester, UK]

**Alberto Calderone** [Dept. of Molecular Biology, "Tor Vergata" University, Roma, IT]

**Raffaele Calogero** [Dep. of Molecular Biotechnology and Health Sciences, University of Torino, IT]

**Tiziana Castrignanò** [CINECA, Roma, IT]

**Matteo Chiara** [Dept. of Biosciences, University of Milano, IT]

**Teresa Colombo** [Istituto di analisi dei sistemi ed informatica IASI-CNR, Roma, IT]

**Vincenza Colonna** [Institute of Genetics and Biophysic IGB-CNR, Napoli, IT]

**Gianmauro Cuccuru** [CRS4, Pula (Cagliari), IT]

**Fabrizio Ferré** [Dept. of Pharmacy and Biotechnology, University of Bologna, IT]

**Tiziano Flati** [IBIOM-CNR, Bari and CINECA, Roma, IT]

**Silvia Gioiosa** [IBIOM-CNR, Bari and CINECA, Roma, IT]

**Giorgio Giurato** [Genomix4Life srl and University of Salerno, IT]



## Our Training model

### Organisational model

### Pedagogical model

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- Website
- Dissemination of training events



A screenshot of a web browser window. The address bar shows "elixir-iib-training.github.io". The page title is "ELIXIR-IIB Training Platform". Below the title is a navigation menu with links: "Training Courses", "All events 2018", "Trainers", "The Training Team", "Et Cetera", and "Archive". The main content area features the IIB logo (INFRASTRUTTURA ITALIANA DI BIOINFORMATICA) and the ELIXIR ITALY logo. A red-bordered box highlights the email address "elixir.ita.training@gmail.com". Below this, there is a paragraph of text about the training platform, followed by another paragraph. At the bottom, a red-bordered box highlights the URL "https://elixir-iib-training.github.io/website/".

# ELIXIR-IIB Training Platform

[Training Courses](#) [All events 2018](#) [Trainers](#) [The Training Team](#) [Et Cetera](#) [Archive](#)

The logo for IIB (INFRASTRUTTURA ITALIANA DI BIOINFORMATICA), consisting of the letters "IIB" in a bold, sans-serif font, with "INFRASTRUTTURA ITALIANA DI BIOINFORMATICA" in a smaller font below it.The logo for ELIXIR ITALY, featuring the word "elixir" in a stylized font with an orange DNA helix graphic, and "ITALY" in a bold, sans-serif font below it.

[elixir.ita.training@gmail.com](mailto:elixir.ita.training@gmail.com)

The ELIXIR-IIB Training Platform is building a thriving community who strongly believes that quality training in bioinformatics is essential to achieve excellence in life science research. Thanks to a very motivated group of people, our programme is engaging an increasing number of passionate scientists interested in taking part in our training initiatives, activities and discussions. Courses are mostly organised in collaboration with ELIXIR-IIB institutions and, whenever possible, in regions in need of a given expertise. They are limited to **20-30** participants to allow high interactivity and intensive practical work. Priority is given to candidates from ELIXIR-IIB institutions and other ELIXIR nodes. Instructors are selected among experts in the course's topic with experience in the application of advanced training practices and techniques. We collaborate with other ELIXIR nodes in activities such as Train the Trainer, eLearning, EXCELERATE use cases' training support and we have a pilot to provide training support to extra-European countries.

If you want to be involved in our initiatives, collaborate with us or need more information about our training activities, you can contact someone from the [ELIXIR-IIB Training Team](#).

<https://elixir-iib-training.github.io/website/>





# ELIXIR-IIB Training Platform

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# Training Courses

Genova, Italy | Oct 22-24, 2018 |

NETTAB18/ELIXIR-IIB Building a FAIR Bioinformatics environment  
[open]

The Eighteenth NETTAB Workshop is organised in collaboration with ELIXIR Nodes of the UK and Italy, as well as the Italian Society of Bioinformatics BITS. The main focus will be on FAIR principles in bioinformatics, a challenging topic that we hope will attract many researchers from all over the world, including but not limited to, Bioinformaticians, Biologists, Computer Scientists, and other working or interested in the above research scope.

Stockholm, Sweden | Oct 9-11, 2018 |

ELIXIR-EXCELERATE Train the Trainer [\[open\]](#)

ELIXIR-EXCELERATE, in collaboration with ELIXIR Sweden and ELIXIR-IIB, is pleased to announce the Train the Trainer (TtT) event. This course is meant to offer guidance, ideas and tips for training/teaching design, development and delivery based on research-driven educational principles. Examples and discussions will also focus on the challenges presented by academic teaching.

Rome, Italy | Sep 27-28, 2018 |

ELIXIR-EXCELERATE Train the Trainer [closed]

ELIXIR-EXCELERATE, in collaboration with ELIXIR-IIB, is pleased to announce a Train the Trainers (TtT) event. This course is meant to offer guidance, ideas and tips for training/teaching design,

## All events 2018

| Event  | Title   | Organisers   | Venue                | Date         | Application   |
|--|---|--|----------------------|--------------|---------------|
| EMBO<br>Practical Course                       | <a href="#">Computational Analysis of PPI: Sequences, networks and diseases</a>         | A. Via<br>T. Gibson<br>M. Sharan<br>V. Morea<br>L. Le Pera       | Roma,<br>Italy       | Nov<br>05-10 | <b>closed</b> |
| NETTAB2018/ELIXIR-IIB<br>Workshop              | <a href="#">Building a FAIR Bioinformatics environment</a>                              | P. Romano<br>ELIXIR-IIB<br>ELIXIR-UK<br>BITS                     | Genova,<br>Italy     | Oct<br>22-24 | <b>open</b>   |
| ELIXIR-EXCELERATE                              | <a href="#">Train the Trainer</a>   | A. Via<br>J. Lindvall<br>L. Le Pera                              | Stockholm,<br>Sweden | Oct<br>9-11  | <b>open</b>   |
| ELIXIR<br>Scientific dissemination<br>activity | <a href="#">Notte Europea dei Ricercatori (Facebook page link)</a>                      | ERN-Apulia<br>University of Salento<br>F. De Leo<br>A. Marabotti | Bari,<br>Italy       | Sep<br>28    |               |
| ELIXIR-EXCELERATE                              | <a href="#">Train the Trainer</a>   | A. Via<br>L. Le Pera   | Roma,<br>Italy       | Sep<br>27-28 | <b>closed</b> |
| ELIXIR-IIB<br>Training Course                  | <a href="#">Docker Advanced Course</a>  | G. Della Vedova<br>L. Le Pera<br>A. Via                          | Milano,<br>Italy     | Sep<br>26-27 | <b>closed</b> |
| Bring Your Own Data<br>Workshop                | <a href="#">Summer School on Rare Disease and Orphan Drug Registries including BYOD</a> | D. Taruscio<br>M. Roos<br>C. Carta                               | Roma,<br>Italy       | Sep<br>10-14 | <b>closed</b> |
|  |   | R. Bonnal  |                      |              |               |



## Our Training model

### Organisational model

- Training team
- Surveys
- Guidelines
  - ETT-organised courses
  - Self-organised courses
- ELIXIR-IT community of trainers
- Collaboration with member institutions
- Support of INFN / Cineca / GARR
- Website
- Dissemination of training events

### Pedagogical model

- Code of Conduct

# Code of Conduct



- Use welcoming and inclusive language
- Be respectful of different viewpoints and experiences
- Gracefully accept constructive criticism
- Focus on what is best for the community
- Show courtesy and respect towards other community members

[https://docs.carpentries.org/topic\\_folders/policies/code-of-conduct.html](https://docs.carpentries.org/topic_folders/policies/code-of-conduct.html)

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- ELIXIR Train the Trainer

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### Pedagogical model

- Code of Conduct
- ELIXIR Train the Trainer
- Never teach and learn alone

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### Pedagogical model

- Code of Conduct
- ELIXIR Train the Trainer
- Never teach and learn alone
- Reflective practice

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### Pedagogical model

- Code of Conduct
- ELIXIR Train the Trainer
- Never teach and learn alone
- Reflective practice
- Live coding



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- Code of Conduct
- ELIXIR Train the Trainer
- Never teach and learn alone
- Reflective practice
- Live coding
- Instant feedback

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- Code of Conduct
- ELIXIR Train the Trainer
- Never teach and learn alone
- Reflective practice
- Live coding
- Instant feedback
- Pre/post-course feedback

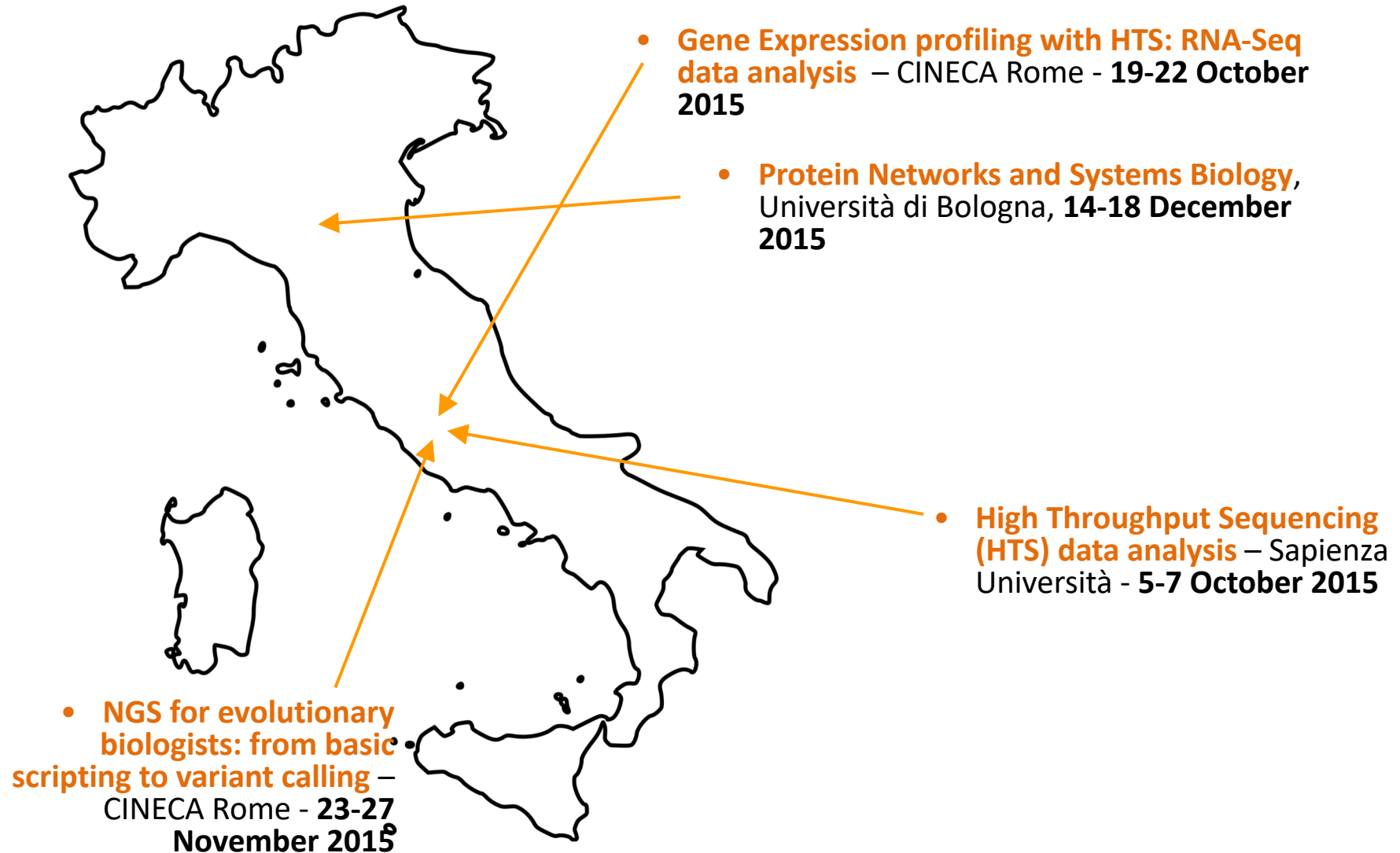
## Best trainers...

constantly monitor what is happening to learners as they set about learning and investigate when things do not proceed as planned or expected.

They also inquire their own practice so they might get better at ensuring that their students learn successfully.



# Courses 2015



# Courses 2016

**Biomedical data analysis,  
interpretation and  
representation**

Rome, **December**

**High Performance Molecular  
Dynamics@CINECA - PRACE Edition**

CINECA, Bologna - **20-30 September**

**Exome analysis using Galaxy**

Milano Bicocca, **19-20 Sept**

**RNA-seq data analysis**

University of Naples Federico II,  
Naples - **June 6-10**

**Effective academic teaching**

University of Salerno, Fisciano  
(SA), Italy - **June 15th,**

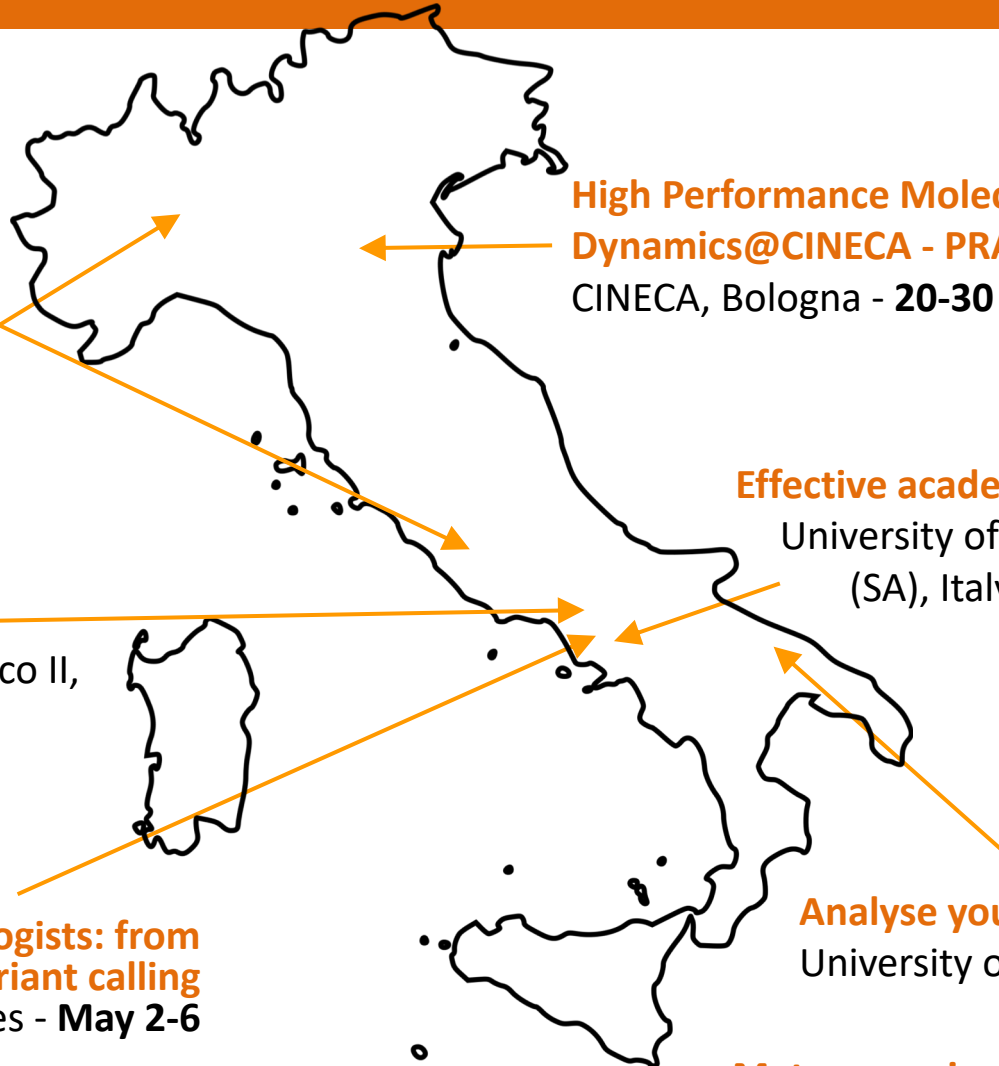
**NGS for evolutionary biologists: from  
basic scripting to variant calling**

CNR, Naples - **May 2-6**

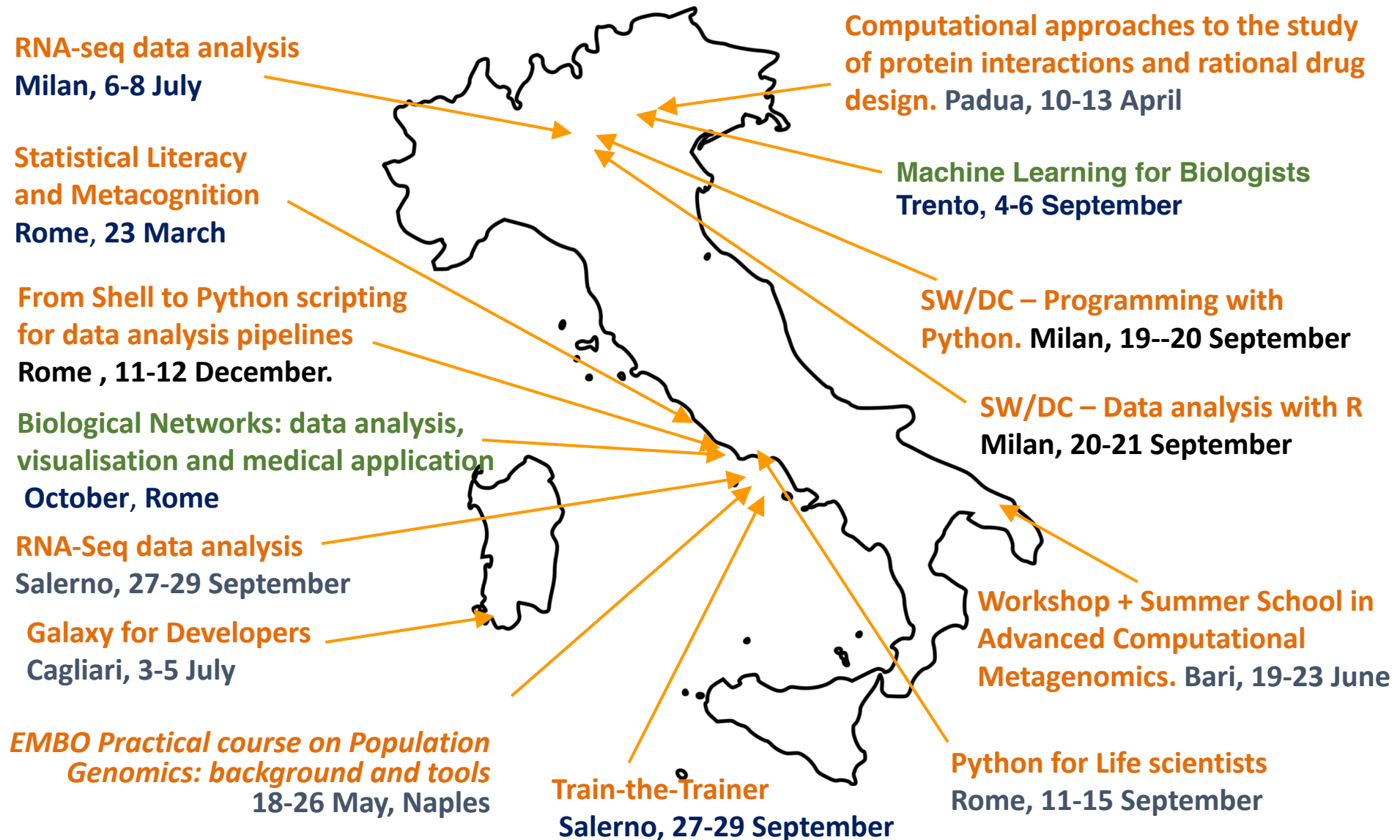
**Analyse your data using Python**

University of Bari, **26-30 Sept**

**Metagenomics data processing  
and analysis** Bari, **December**



# Courses 2017





# Events 2018

[https://elixir-iib-training.github.io/website/all\\_events\\_2018/](https://elixir-iib-training.github.io/website/all_events_2018/)



# Thank you!



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Loredana Le Pera  
IBIOM-CNR



Vincenza Colonna  
IGB-CNR



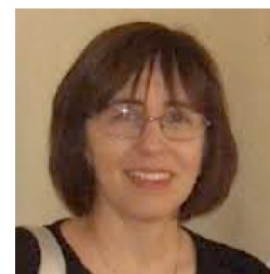
Francesca De Leo  
IBBE-CNR



Luana Licata  
University of  
Rome "Tor  
Vergata"



Ivan Micetic  
University of  
Padua



Anna Marabotti  
University of Salerno

