



## Report

### D2.3 Midterm report on organized joint events, schools, workshops and conferences

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## **Executive Summary**

The main aim of WP2 is to organize scientific events such as summer schools, workshops and international conferences. These actions benefit from the consortium experience and will cover the research topics identified. The activities are in line with the objectives of OLISSIPO, in particular, to establish a leading pole of excellence in Computational Biology at INESC-ID and support regional initiatives under the SMART specialization strategy for Lisbon and Portugal.

This deliverable outlines the midterm report on the organization of scientific events such as schools, workshops, and the invited lecture series, corresponding to the first 18 months of the project.

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## 1. Introduction

The goal of WP2 is to organize scientific events, covering the Strategic Areas identified in the project: A1) single-cell analysis, modeling and simulation; A2) mathematical modeling of inter-cell and communities' interactions; A3) computational phylogenetics of cells and communities; and A4) translational bioinformatics, data management and software development. These activities are in line with the objectives of OLISSIPO, in particular the establishment of a leading pole of excellence in Computational Biology in Europe and to support regional initiatives under the SMART specialization strategy for Lisbon and Portugal.

In line with this, OLISSIPO supports the organization of Computational Biology seminars – the OLISSIPO Twin Seminars – which can contribute to disseminate the scientific work and expertise of all the consortium and contribute to attracting new talented researchers to INESC-ID. In addition, the project also organizes workshops and schools, and supports the preparation of international conferences.

Due to the COVID-19 pandemic, some of the planned activities were postponed and others organized (online) to encourage interactions among the institutions during the first year (such as the OLISSIPO week).

All the Twinning partners support these actions, given their leading experience in program committees, steering committees and as conference chairs.

### 1.1 Deliverable objective

This deliverable outlines the midterm report on the organization of scientific events such as schools, workshops, and the invited lecture series, corresponding to the first 18 months of the project.

## 2. Midterm report on organized joint events, schools, workshops and conferences

### 2.1. OLISSIPO events

#### 2.1.1. OLISSIPO Kick-off Meeting | February 9, 2021

The Kick-Off Meeting of the OLISSIPO project was held online with 26 participants including PIs and administrative staff from the consortium, as well as officers from the European Commission. During the KoM, the first year's activities were defined and mitigation measures to be taken due to the COVID-19 pandemic were outlined.

List of participants:

INESC-ID team:

1. Susana Vinga, PI
2. Sara Tanqueiro, Project Manager
3. Ilda Ribeiro, Financial Officer
4. Inês Lynce, INESC-ID president
5. Rogério Colaço, Instituto Superior Técnico (IST) president
6. Arlindo Oliveira, Researcher
7. Alexandre Francisco, Researcher
8. Rui Henriques, Researcher
9. José Borbinha, Researcher
10. Tatiana Nunes, Communication Officer
11. Carolina Peixoto, ESR
12. José Basílio, ESR

Inria:

13. Marie-France Sagot, PI
14. Leen Stougie, Researcher

ETH:

15. Niko Beerenwinkel, PI

EMBL:

16. Wolfgang Huber, PI
17. Simone Bell, Project Manager

Scientific Advisory Board (SAB):

18. Magnus Rattray
19. Dan Gusfield
20. Jens Stoye
21. Jonas Almeida
22. Julien Gagneur
23. Yves Moreau

European Commission:

24. Luciano Catani, RTD monitor
25. Eve Sostra, Financial Officer
26. Oana Radu, Project Officer

### 2.1.2. OLISSIPO Twin Seminars

The Twin Seminars were created to disseminate the scientific work and expertise of INESC-ID and all the Consortium that includes Inria, ETH Zürich and EMBL. These seminars have been organized to include two short presentations (20-30 min/each), one from a Lecturer from the Lisbon team followed by a second presentation from a twin international researcher working on similar topics. After these, a discussion is opened to the public to further promote interactions between all the participants. The seminars are open to everyone interested and further disseminated on the OLISSIPO YouTube channel (upon the agreement of all the participants).

These lectures include experts from a specific subject related to the Strategic Areas in Computational Biology of the project as previously identified:

- [First OLISSIPO Twin Seminar](#) | May 20, 2021

Title: Sparse regularization for multi-omics data.

Speakers: Prof. Susana Vinga and Prof. Valentina Boeva

Chair/Moderator: Niko Beerenwinkel

Participants: 62

Visualizations post-seminar: 152 + 48

- [Second OLISSIPO Twin Seminar](#) | September 16, 2021

Title: Towards the clinical utility of polygenic risk scores.

Speakers: Ana Teresa Freitas & Michael Inouye

Chair/Moderator: Mário Gaspar da Silva

Participants: 50

Visualizations post-seminar: 5 + 17

- [Third OLISSIPO Twin Seminar](#) | February 10, 2022

Title: Protein driven machine learning and network approaches for precision medicine.

Speakers: Emanuel Gonçalves & Pedro Beltrão

Chair/Moderator: Thomas Naake

Participants: 48

Visualizations post-seminar: 35 + 63

### 2.1.3. OLISSIPO Week | June 14-16, 2021

The OLISSIPO Week had 27 speakers and more than 30 participants. It took place in a virtual mode and its main aim was to facilitate the interaction among members of the four partner institutions, to create synergies and accelerate project activities. The list of participants and the details of this activity are described in D1.2 - *Midterm report staff exchanges*.

### 2.1.4. First Annual Meeting | January 13, 2022

Given the availability of international teams, the annual meeting was postponed for one month. After the agenda was settled between all partners, the OLISSIPO coordination at INESC-ID sent the invitation e-mails to the SAB and project officer at EC. The first annual meeting was held virtually with 17 participants including PIs and administrative staff to discuss relevant topics and plan new events and activities for 2022. This event is detailed in D6.3 - *First annual project meeting with the SAB*.

## 2.2. OLISSIPO workshops

### 2.2.1. OLISSIPO Inaugural Workshop | July 20, 2021

OLISSIPO hosted the project's [Inaugural Workshop](#) on Computational Cell Biology, held virtually for one half-day. The Workshop involved four speakers, experts in the fields of Computer Science and Computational Biology: Professors Rolf Backofen, Susan Holmes, Dana Pe'er and Luay Nakhleh. The agenda was the following:

14:00 Welcome

14:10 Professor Dr. Rolf Backofen, Albert-Ludwigs-Universität Freiburg, Germany

*Machine learning in the context of CRISPR systems.*

15:00 Professor Dr. Susan Holmes, Stanford University, USA

*Integrating networks, probabilities and trees into multidomain methods for immunology and microbiology.*

15:50-16:20 *Coffee-break*

16:20 Professor Dr. Dana Pe'er, Memorial Sloan Kettering Cancer Center, SKI, New York, USA

*Trajectories in cancer and development.*

17:10 Professor Dr. Luay K. Nakhleh, Rice University, Houston, TX, USA

*Elucidating Intra-tumor Heterogeneity from Single-cell DNA Sequencing Data.*

18:00 Closing session

More than 140 participants joined our event. Several members from each OLISSIPO partner attended this event. However, the exact number of participants and ESRs was not registered. All the videos of this Workshop are available on our YouTube channel [here](#).

The organization of this event involved all partners, including emails exchange and video-conference meetings.



**Figure 1.** Keynote speakers at the OLISSIPO Inaugural Workshop on Computational Biology.

### 2.2.2. Workshop Metabolism and mathematical models: Two for a tango | November 18-19, 2021

This Workshop was organized by the Inria European Team Erable in the context of OLISSIPO and of another project which involves a partnership with the University of São Paulo (USP), in São Paulo, Brazil, more specifically the Institute of Mathematics and Statistics (IME) and the Institute of Biomedical Sciences – Inria Associated Team Capoeira, thus also strengthening the collaborations with another Portuguese-speaking country.

The topic of this Workshop was metabolism in general, with a special focus, although not exclusive, on parasitology. Besides the exploration of the biological, biochemical and biomedical aspects, the Workshop also aimed at presenting some of the mathematical modeling, algorithmic theory and software development which is aligned with the strategic areas identified in the project.



The organization of this event involved INESC-ID and Inria, including emails exchange and video-conference meetings.

More than 150 participants joined this event. INESC-ID had 6 participants, including 2 ESRs, Inria had 8 participants, including 2 ESRs, EMBL had 2 participants attending this event, including 1 ESR and ETH had 1 participant, an ESR.

The videos of this Workshop are available [here](#).

	Thursday 18	Friday 19
14h00-14h10 CET time	Introduction to the workshop	Introduction to the second day
14h10-14h50 CET time	Talk 1: Fabien Jourdan	Talk 4: Alena Ziková
14h50-15h05 CET time	Questions and discussion on Talk 1	Questions and discussion on Talk 4
15h05-15h15 CET time	Short break	Short break
15h15-15h55 CET time	Talk 2: Michael Barrett	Talk 5: Daniel Merkle
15h55-16h10 CET time	Questions and discussion on Talk 2	Questions and discussion on Talk 5
16h10-16h20 CET time	Short break	Short break
16h20-17h00 CET time	Talk 3: Daniel Segrè	Talk 6: Frédéric Bringaud
17h00-17h15 CET time	Questions and discussion on Talk 3	Questions and discussion on Talk 6
17h15-17h30 CET time	Final discussion and conclusion of the first day	Final discussion and conclusion of the workshop

**Figure 2.** Workshop Two for Tango agenda.

Talk 1: Fabien Jourdan, Inrae Toulouse, MetaboHUB, France

*Making sense of metabolic profiles using network science and knowledge graphs.*

Talk 2: Michael Barrett, University of Glasgow, Scotland

*Metabolomics of drug response in trypanosomes and leishmania.*

Talk 3: Daniel Segrè, Boston University, US

*Using computational models to help design synthetic microbial communities.*

Talk 4: Alena Ziková, Institute of Parasitology, Czech Academy of Sciences, Czech Republic

*Unexpected metabolic flexibility of mammalian forms of trypanosomes.*

Talk 5: Daniel Merkle, University of Southern Denmark, Denmark

*Graph Transformations and Algorithmic Cheminformatics for an Atom-Level Modelling of Metabolic Networks.*

Talk 6: Frédéric Bringaud, University of Bordeaux, France

*Adaptation of trypanosomes to available carbon sources and carbon source preference.*

The videos of this workshop are available [here](#).

**Table 2.** Feedback from the Workshop Metabolism and mathematical models: Two for a tango.

(1 – Don't agree/Not useful at all, 5– Fully agree/Extremely useful).

Would you prefer these workshops to occur during 1 or 2 days?	Do you have preference for the weekdays when the events occur?	What format would you like to see more in these workshops?	The duration of each presentation was adequate.	The duration of time allocated for questions was adequate.	How useful was the workshop to you?	Do you have any further comments or suggestions?
Two days	I don't have any preference.	Days with the two subjects (mixed), as done previously.	5	5	5	
Two days	I don't have any preference.	Days with the two subjects (mixed), as done previously.	5	5	5	
Two days	I don't have any preference.	Days with the two subjects (mixed), as done previously.	4	4	5	
Two days	monday	Each day dedicated to one subject.	4	4	5	
Two days	I don't have any preference.	Days with the two subjects (mixed), as done previously.	5	5	4	More Hands on work and takeaway assignments to do as homework
Two days	monday, tuesday, friday	Days with the two subjects (mixed), as done previously.	5	5	5	Excellent fruitful sessions. Thanks a lot for the speakers and the organizers.
Two days	I don't have any preference.	Days with the two subjects (mixed), as done previously.	3	4	3	
Two days	I don't have any preference.	Each day dedicated to one subject.	4	4	2	
Two days	I don't have any preference.	Each day dedicated to one subject.	5	5	5	

## 2.3. Organisation of Conferences and other events

### 2.3.1. ISMB/ECCB 2021 | July 25-30, 2021

Professor Marie-France Sagot from Inria was one of the conference co-chairs of the international conference Intelligent Systems for Molecular Biology / European Conference on Computational Biology (ISMB/ECCB). This is the year's most important computational biology event worldwide. As indicated on the webpage of the conference (<https://www.iscb.org/ismbecb2021>), it had more than 2100 participants from nearly 80 countries. It is a multidisciplinary forum for disseminating the latest developments in bioinformatics and computational biology.

### 2.3.2. ALGO 2021 | September 6-10, 2021

OLISSIPO was one of the sponsors and local organizers of ALGO'2021 (<http://algo2021.tecnico.ulisboa.pt>), one of the major European events for researchers, students, and practitioners in algorithms, which was organized by INESC-ID. Professor Susana Vinga participated in the organization of this international conference along with other members of the IDSS (Information and Decision Support Systems) lab at INESC-ID (including the OLISSIPO team members Prof. Arlindo Oliveira, Prof. Ana Teresa Freitas, and Prof. Alexandre Francisco).



**Figure 3.** OLISSIPO was one of the ALGO 2021 sponsors and the team participated also in the Organizing Committee.

### 2.3.3. Small non coding RNAs Bioinformatics club

The Small non coding RNA Bioinformatics Club is organized by several [researchers](#), including Prof. Marie-France Sagot. Its main aim is to provide a virtual place for discussion around such molecules. To animate these discussions, a seminar is organized every two months. OLISSIPO disseminates the event on the project website and on social media.

Seminars are available on the [YouTube channel](#) of the club. Four seminars were already organized:

November 8, 2021 – Prof. Hervé Seitz

January 19, 2022 – Prof. Han Liang

March 21, 2022 – Prof. Stefan Kirsch

May 2, 2022 – Prof. Isana Veksler-Lublisnky

### 2.3.4. Ascona 2022 Workshop | March 27 - April 1, 2022

Professor Niko Beerenwinkel from ETH and Professor Wolfgang Huber from EMBL, two PIs participating in the OLISSIPO project, were part of the organizing committee of the [Ascona Workshop 2022](#) - Biological systems: from first principles to data-driven modelling and back, in which Professor Susana Vinga also participated (Figure 4).



**Figure 4.** Three OLISSIPO PIs at the Ascona 2022 Workshop in Switzerland.

### 2.3.5. CSAMA 2022 | June 19-24, 2022

The one-week intensive course Statistical Data Analysis for Genome-Scale Biology - [CSAMA 2022](#) was held on June 19-24, 2022, in Bressanone-Brixen, Italy. The EMBL PI, Prof. Wolfgang Huber, and project manager, Simone Bell, organize this international conference. Two INESC-ID ESRs participated in the event (Mónica Silva and João Aparício) (Figure 5). Additionally, CSAMA 2023 and 2024 are also confirmed.



**Figure 5.** Mónica Silva and João Aparício, two INESC-ID ESRs with the EMBL PI, Dr. Wolfgang Huber, and the project manager Simone Bell in Brixen, Italy.

## 3. Conclusions

Events of the second half period will be reported in D2.4 - Final report on organized joint events, schools, workshops and conferences.