



A.D. 1308  
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UNIVERSITÀ DEGLI STUDI  
DI PERUGIA

**Ph.D. in Biotechnology**  
**University of Perugia**

# **Winter School on Biotechnology**

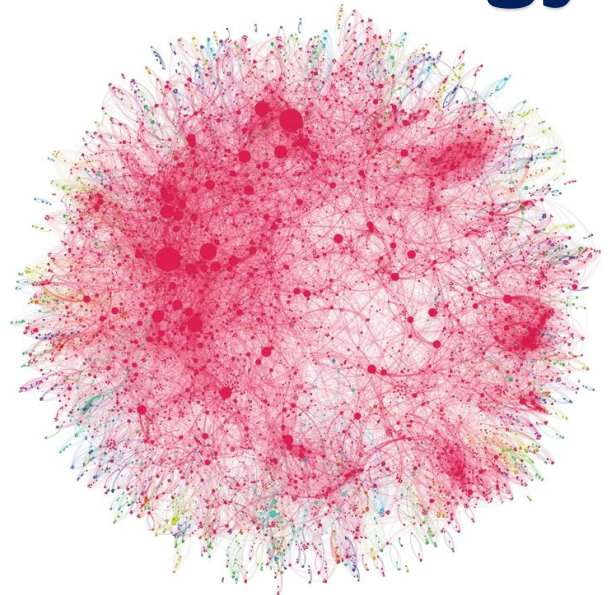
**8<sup>th</sup> edition**

**17-21 January 2022** Digital on-line edition

## **Complexity in Biotechnology**

**«The first  
difficulty with  
thinking about the  
future is thinking  
about the  
present.»**

**Edgar Morin – Philosopher of  
Complexity**



**Taming complexity:** This graphic shows the co-authorship network of the topic «Hepatitis C virus» between 2008 and 2012. Each spot is a single author, and the lines represent co-authorship relationships. Influential authors are bigger. Adapted from @Andy Lamb, Inspired Science and Ketchum.

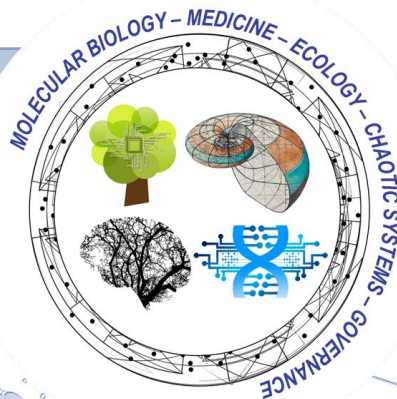
**Scientific Committee:** Stefano Bruscoli  
Gianluigi Cardinali  
Fausto Elisei  
Carla Emiliani

**Organizing Committee:**

Martina Alunni Cardinali  
Stefano Bruscoli  
Gianluigi Cardinali  
Benedetta Carlotti  
Laura Corte  
Daniele Fioretto

Pier Luigi Gentili  
Gabriele Magara  
Sabata Martino  
Assunta Morresi  
Francesco Paolocci  
Efisio Puxeddu

# Complexity in Biotechnology



info: [dottorato.biotechnologie@unipg.it](mailto:dottorato.biotechnologie@unipg.it)

registration: <http://www.dccb.unipg.it/wsb2022>

**Monday, January 17, 2022**

**Chairs: Gianluigi Cardinali (morning and afternoon)**

09:00 – 09:30		OPENING
09:30 – 11:30	Isak Sakkie Pretorius	Reinventing yeast genomes as a novel framework for engineering the next generation industrial strains
11:30 – 12:00		Virtual COFFEE BREAK
12:00 – 13:30	Pier Luigi Gentili	Introduction to the Investigation of Complex Systems
15:30 – 17:30	Round Table	Around the “CoSy Thinking” project

[Monday morning](#)

[Session links](#)

[Monday afternoon](#)

**Tuesday, January 18, 2022**

**Chairs: Assunta Marrocchi (morning) – Pier Luigi Gentili, Lorena Urbanelli (afternoon)**

09:30 – 11:00	Pasquale Stano	Semi-synthetic minimal cells: from the origins of life to synthetic biology
11:00 – 11:30		Virtual COFFEE BREAK
11:30 – 13:00	Diego Sona	Complexity and Artificial Intelligence
15:30 – 17:00	Juan Perez-Mercader	What is life? Making non-biochemical life in the laboratory
17:00 – 17:30		Virtual TEA BREAK
17:30 – 18:30	Oral Presentations	Oral presentations of Ph.D. Students

[Tuesday morning](#)

[Session links](#)

[Tuesday afternoon](#)

**Wednesday, January 19, 2022**

**Chairs: Stefano Bruscoli (morning) – Sabata Martino (afternoon)**

09:30 – 11:00	Karolien De Bosscher	Glucocorticoid receptor biology: work in progress
11:00 – 11:30		Virtual COFFEE BREAK
11:30 – 13:00	Raffaella Molteni	The stressed brain: a complex affair
15:00 – 18:00	Lia Chappel	Layers of genomics technologies to find the past and future of single cells

[Wednesday morning](#)

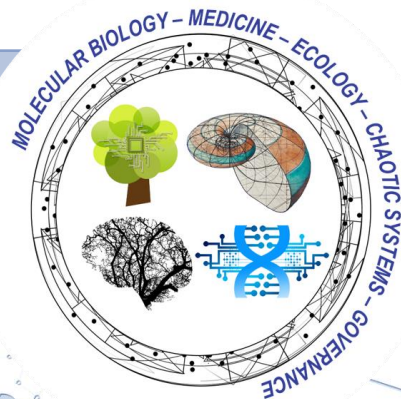
[Session links](#)

[Wednesday afternoon](#)

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Thursday, January 20, 2022

Chairs: Martina Alunni Cardinali, Nicolò Montegiove, Benedetta Carlotti (morning) – Daniele Fioretto, Simona Ronchetti (afternoon)

09:30 – 10:30	Brainstorming around Complexity	Brainstorming around Complexity with Ph.D. Students
10:30 – 11:00		Virtual COFFEE BREAK
11:00 – 12:30	Oral Presentations	Oral presentations of Ph.D. Students
15:30 – 17:00	Daniel Segrè	Metabolic competition and cooperation in microbial communities
17:00 – 17:30		Virtual TEA BREAK
17:30 – 19:00	Oral Presentations	Oral presentations of Ph.D. Students

[Thursday morning](#)

[Session links](#)

[Thursday afternoon](#)

Friday, January 21, 2022

Chairs: Assunta Morresi, Laura Corte (morning)

09:00 – 09:30	Assunta Morresi	Introduction to the governance of complexity
09:30 – 10:15	Marco Moschini	Governance of complex systems
10:15 – 11:00	Martí Manyalich	The organ and tissue transplantation system
11:00 – 11:30		Virtual COFFEE BREAK
11:30 – 13:00	Florian Bauer	How to better exploit complex microbial ecosystems in biotechnology: Wine fermentation as a model

[Friday morning](#)

[Session links](#)

[Open day](#)

## 21 January 2022 15:30 – 18:30

Open day – Biotechnology and Society:

«La Complessità dalla fisica alla biologia»

### Speakers:

Prof. Luca Gammaitoni – University of Perugia (IT)

Prof. Cornelius Gross – Interim Head of EMBL Rome (IT)

Prof. Fulvio Mavilio – University of Modena and Reggio Emilia (IT)

### Chair:

Prof. Pier Luigi Gentili – University of Perugia (IT)



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<b>Affiliations:</b>		
<b>Florian</b>	Bauer	Stellenbosch University (ZA)
<b>Karolien</b>	De Bosscher	Ghent University (BE)
<b>Lia</b>	Chappel	Wellcome Sanger Institute (UK)
<b>Luca</b>	Gammaitoni	University of Perugia (IT)
<b>Pier Luigi</b>	Gentili	University of Perugia (IT)
<b>Cornelius</b>	Gross	European Molecular Biology Laboratory, Rome (IT)
<b>Martí</b>	Manyalich	Donation & Transplantation Institute Foundation (ES)
<b>Fulvio</b>	Mavilio	University of Modena and Reggio Emilia (IT)
<b>Raffaella</b>	Molteni	University of Milan (IT)
<b>Assunta</b>	Morresi	University of Perugia (IT)
<b>Marco</b>	Moschini	University of Perugia (IT)
<b>Juan</b>	Perez-Mercader	Harvard University (USA)
<b>Isak Sakkie</b>	Pretorius	Macquarie University (AU)
<b>Daniel</b>	Segrè	Boston University (USA)
<b>Diego</b>	Sona	Italian Institute of Technology (IT)
<b>Pasquale</b>	Stano	University of Salento (IT)



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