

## Università degli Studi di Roma Tor Vergata

### CURRICULUM DIDATTICO-SCIENTIFICO

**DOTT. LORENZO ANTONETTI**



### DATI PERSONALI

|                       |                                   |
|-----------------------|-----------------------------------|
| Nome e Cognome:       | Lorenzo Antonetti                 |
| Settore:              | Bioinformatica                    |
| Dipartimento:         | Medicina dei Sistemi              |
| E-mail istituzionale: | lorenzo.antonetti@med.uniroma2.it |
| Ricevimento:          | Su appuntamento tramite mail      |

### ATTIVITÀ DIDATTICA - SCIENTIFICA

#### Titoli di studio:

- Dottorato di Ricerca in Medicina dei Sistemi e Sperimentale, Università degli Studi di Roma Tor Vergata (2021–2024). Titolo della tesi: “Decreased circulating IPA levels identify subjects with metabolic comorbidities: A multi-omics study”.
- Laurea Magistrale in Bioinformatica, Università degli Studi di Roma Tor Vergata (2018–2021). Titolo tesi: “Mesoscale indices for topological analysis of biological networks”.  
Votazione finale: 110/110 e lode.
- Laurea Triennale in Bioinformatica, Università degli Studi del Sannio (2015–2018). Titolo tesi: “The functional heterogeneity of macrophages”. Votazione finale: 110/110 e lode.

#### Attività di ricerca:

Attività di ricerca focalizzata sull’analisi di dati multi-omici (NGS, microarray, metabolomica, metagenomica 16S rRNA), sull’integrazione di dataset complessi e sull’identificazione di biomarcatori e meccanismi molecolari in ambito metabolico e cardiovascolare.

#### Competenze metodologiche e informatiche:

Programmazione in R, Python e Bash (Unix/Linux); sviluppo, ottimizzazione e manutenzione di pipeline bioinformatiche per l'analisi e l'integrazione di dati multi-omici; analisi statistica avanzata; gestione e analisi di big data biologici in ambienti HPC e cloud; utilizzo di database relazionali; versionamento del codice e pratiche di riproducibilità della ricerca.

#### **Altre esperienze rilevanti:**

Tirocinio studentesco presso IRCCS Casa Sollievo della Sofferenza (2020–2021), con attività di implementazione e validazione di indici non canonici (metriche mesoscalari) in ambito di ricerca biomedica, mediante l'utilizzo del framework ad alte prestazioni Pyntacle per l'analisi di reti complesse.

#### **Comunicazioni a congressi:**

Short oral discussion presentate al Congresso EASD (European Association for the Study of Diabetes), Vienna, 2025:

- Profiling gene expression and immune cell abundance of atherosclerotic plaques in patients with impaired glucose metabolism and type 2 diabetes.
- Multi-Omics Analysis Reveals Microbial–Metabolic Signatures of Metabolic Syndrome.

#### **PUBBLICAZIONI**

Casagrande O., Paroni A., Iersi A., Federici M., Menghini R., Antonetti L. Effect of 3-hydroxybutyrate in vivo administration on cardiometabolic disease in ApoE<sup>-/-</sup> mouse model. *Pharmacological Research*, 2025.

Antonetti L., Berrilli F., Cardellini M., Federici M., D'Alfonso R. Human Gut Microbiota Profiles Related to Mediterranean and West African Diets and Association with *Blastocystis* Subtypes. *Nutrients*, 2025.

Antonetti L., Berrilli F., Di Cristanziano V., Federici M., D'Alfonso R. Investigation of gut microbiota composition in humans carrying *Blastocystis* subtypes 1 and 2 and *Entamoeba hartmanni*. *Gut Pathogens*, 2024.

Ballanti M., Antonetti L., et al. Decreased circulating IPA levels identify subjects with metabolic comorbidities: A multi-omics study. *Pharmacological Research*, 2024.

## University of Rome Tor Vergata

### ACADEMIC AND SCIENTIFIC CURRICULUM

**DR. LORENZO ANTONETTI**

#### PERSONAL DATA

|                       |                                   |
|-----------------------|-----------------------------------|
| Name and Surname:     | Lorenzo Antonetti                 |
| Field:                | Bioinformatics                    |
| Department:           | Systems Medicine                  |
| Institutional e-mail: | lorenzo.antonetti@med.uniroma2.it |
| Office hours:         | By appointment via email          |

#### SCIENTIFIC AND ACADEMIC ACTIVITY

##### Education:

- PhD in Systems and Experimental Medicine, University of Rome Tor Vergata (2021–2024). Thesis title: “Decreased circulating IPA levels identify subjects with metabolic comorbidities: A multi-omics study”.
- Master’s Degree in Bioinformatics, University of Rome Tor Vergata (2018–2021). Thesis: “Mesoscale indices for topological analysis of biological networks”. Final grade: 110/110 cum laude.
- Bachelor’s Degree in Bioinformatics, University of Sannio (2015–2018). Thesis: “The functional heterogeneity of macrophages”. Final grade: 110/110 cum laude.

##### Research activity:

Research activity focused on multi-omics data analysis (NGS, microarray, metabolomics, 16S rRNA metagenomics), data integration and identification of biomarkers and molecular mechanisms in metabolic and cardiovascular diseases.

##### Methodological and technical skills:

Programming in R, Python and Bash (Unix/Linux); development, optimization and maintenance of bioinformatics pipelines for multi-omics data analysis and integration; advanced statistical analysis; management and analysis of large-scale biological data in HPC and cloud environments; use of relational databases; code versioning and research reproducibility best practices.

##### Other relevant experience:

Student internship at IRCCS Casa Sollievo della Sofferenza (2020–2021), focused on the implementation and validation of non-canonical indices (mesoscale metrics) in biomedical research, using the high-performance Pyntacle framework for complex network analysis.

### **Conference contributions:**

Short oral discussions presented at the EASD Congress (European Association for the Study of Diabetes), Vienna, 2025:

- Profiling gene expression and immune cell abundance of atherosclerotic plaques in patients with impaired glucose metabolism and type 2 diabetes.
- Multi-Omics Analysis Reveals Microbial–Metabolic Signatures of Metabolic Syndrome.

### **PUBLICATIONS**

Casagrande O., Paroni A., Iersi A., Federici M., Menghini R., Antonetti L. Effect of 3-hydroxybutyrate in vivo administration on cardiometabolic disease in ApoE<sup>-/-</sup> mouse model. *Pharmacological Research*, 2025.

Antonetti L., Berrilli F., Cardellini M., Federici M., D'Alfonso R. Human Gut Microbiota Profiles Related to Mediterranean and West African Diets and Association with Blastocystis Subtypes. *Nutrients*, 2025.

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