



Co-funded by the  
Erasmus+ Programme  
of the European Union



## 2022 CIVIS Summer School

### Health Hub

### Domain 10 & Domain 17

(GASTROENTEROLOGY, HEPATOLOGY, & MICROBIORESEARCH)

(ORAL HEALTH)

Joint event

Faculty of Medicine and Dentistry

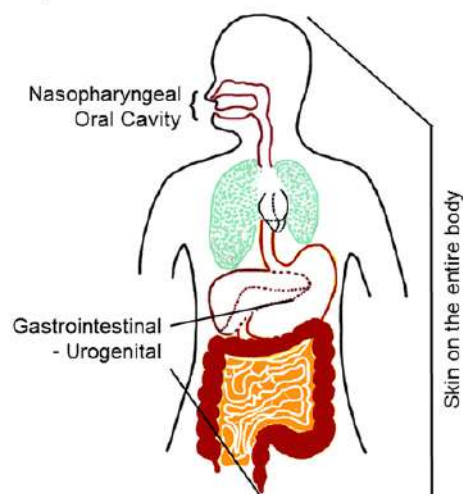
Faculty of Pharmacy and Medicine

**ROME 11th-15th July 2022**

**PRELIMINARY PROGRAM**

# **MICROBIOTA IN ORAL AND DIGESTIVE HEALTH: FROM RESEARCH TO CLINICAL PRACTICE**

Major Anatomical Distribution Sites of Microbiota



*picture reference:*  
<https://www.liebertpub.com/doi/10.1089/biores.2017.0020>



Co-funded by the  
Erasmus+ Programme  
of the European Union



2022 CIVIS SUMMER SCHOOL (Domains 10 and 17) – “Microbiota in Oral and Digestive Health: From research to clinical practice”

|   |
|---|
| <p><u>Title of the proposed activity</u></p> <p><b>“Microbiota in Oral and Digestive Health: From research to clinical practice”</b></p>  |
| <p><u>Type of activity</u></p> <p><b>CIVIS Summer School</b></p>  |
| <p><u>Health domain of reference</u></p> <p><b>Health Hub Domain 10: GASTROENTEROLOGY, HEPATOLOGY, &amp; MICROBIORESEARCH</b><br/><b>Health Hub Domain 17: ORAL HEALTH</b></p>  |
| <p><u>CIVIS partner universities involved</u></p> <p><b>UB - University of Bucharest (Romania)</b><br/><b>ULB - Université Libre de Bruxelles (Belgium)</b><br/><b>SUR - Sapienza University of Rome (Italy)</b><br/><b>NKUA - National Kapodistrian University of Athens (Greece)</b><br/><b>UAM - Autonomous University of Madrid (Spain)</b></p>   |
| <p><u>Timeline of the initiative</u></p> <p><b>This CIVIS Summer School will be held in Sapienza University of Rome over one week in Summer 2022 (tentative dates 11-15 July).</b></p>  |
| <p><u>Name, affiliation, and contact of the proponent</u></p> <p><b>Prof. Vincenzo Cardinale, MD (Facilitator of Health Hub Domain 10)</b><br/>Associate Professor of Gastroenterology at Sapienza University of Rome, Department of Medico-Surgical Sciences and Biotechnologies<br/>Sapienza University of Rome<br/>Viale dell’Università 37, 00185 Rome, Italy<br/>Phone: +393495601492; Email: <a href="mailto:vincenzo.cardinale@uniroma1.it">vincenzo.cardinale@uniroma1.it</a></p> <p><b>Prof. Umberto Romeo, DDS (Facilitator of Health Hub Domain 17)</b><br/>Associate Professor, Department of Oral Sciences and Maxillofacial Surgery<br/>Sapienza University of Rome<br/>Via Caserta, 6, 00161 Rome, Italy<br/>Phone: +393334134697; Email: <a href="mailto:umberto.romeo@uniroma1.it">umberto.romeo@uniroma1.it</a></p> |
| <p><u>Name and affiliation of the administrative officer involved in the initiative</u></p> <p><b>Dr.ssa Rosalba Simeone: (RAD of Department of Oral Sciences and Maxillofacial Surgery) Domain 17.</b></p>   |



Co-funded by the  
Erasmus+ Programme  
of the European Union



Name and affiliation of all academics involved in the initiative



UNIVERSITY OF  
BUCHAREST  
— VIRTUTE ET SAPIENTIA —

- **Alina Holban:** Associate Professor in Microbiology and Immunology, Faculty of Biology, University of Bucharest.
- **Gratiella Gradisteanu:** The Research Institute of the University of Bucharest (ICUB), Bucharest, Romania



UNIVERSITÉ  
LIBRE  
DE BRUXELLES

- **Nicolas Baeyens:** Laboratoire de Physiologie et de Pharmacologie (LAPP) - Faculté de Médecine Campus Erasme - CP 604 Route de Lennik, 808 - 1070 Bruxelles
- **Sibel Cetik:** Université Libre de Bruxelles | ULB · Laboratory of Physiology and Pharmacology



HELLENIC REPUBLIC

**National and Kapodistrian  
University of Athens**

— EST. 1837 —

- **William Papaioannou:** Department of Preventive and Community Dentistry, DENTAL FACULTY - 2 Thivon Str, 115 27, Goudi, Athens, Greece.



Universidad Autónoma  
de Madrid

- **Héctor Guadalajara:** Department of General and Digestive Surgery, Fundación Jiménez Díaz University Hospital, Avda. Reyes Católicos 2, 28040, Madrid, Spain.
- **Olatz Lopez Fernandez:** Health Research Institute, Fundación Jiménez Díaz University Hospital.



Co-funded by the  
Erasmus+ Programme  
of the European Union



**SAPIENZA**  
UNIVERSITÀ DI ROMA

- **Vincenzo Cardinale:** Department of Medico-Surgical Sciences and Biotechnologies.
- **Lorenzo Ridola:** Department of Translational and Precision Medicine.
- **Daniela De Biase:** Department of Medico-Surgical Sciences and Biotechnologies - Coordinator Academy Mobility for CIVIS.
- **Paola Velardi:** Department of Computer Science.
- **Cosimo Durante:** Department of Translational and Precision Medicine.
- **Livia Ottolenghi:** Head of Dental School - Department of Oral Sciences and Maxillofacial Surgery.
- **Gianluca Gambarini:** Head of Dental Hygienist School - Department of Oral Sciences and Maxillofacial Surgery.
- **Umberto Romeo:** Department of Oral Sciences and Maxillofacial Surgery - Coordinator Academy Mobility for CIVIS.
- **Andrea Pilloni:** Department of Oral Sciences and Maxillofacial Surgery - Director of Master in Periodontology.
- **Stefano Ginanni Corradini:** Department of Translational and Precision Medicine.
- **Maria Pia Conte:** Department of Public Health and Infectious Diseases.
- **Oliviero Riggio:** Department of Translational and Precision Medicine.

Estimated number of participants who will benefit from this activity

**20 international CIVIS students: Medicine and Dentistry & PhD Bachelors/ Masters, 1.5 ECTS credits**

**6 local students: Medicine and Dentistry & PhD Bachelors/ Masters, 1.5 ECTS credits**

Short description of the initiative

The school has been conceived to offer the unique occasion to confront with the consolidate evidences and research frontiers in oral and digestive health with emphasis on the role of microbiota. Hands on workshop in practical skills in scientific research from reading and writing, to experimental designing and data management and analysis, comprising the use of the artificial intelligence and network medicine will be offered. The students will be conducted along a journey back and forward from research frontiers and hands on sections in the wet and dry laboratory, to the daily clinical practice.

The first 4 days will be divided in two parts; the first one will be dedicated to seminars and workshops, the second part of each day will be conducted in clinical divisions of Gastroenterology/ Hepatology/ Endoscopy or Dentistry, where student will be immersed in clinical activities in contact with patients, senior and junior tutors. The last day will be divided in two parts: in the first part small group of students with a tutor will conceive a research project aimed to address clinical or translational needs using the knowledge acquired during seminars and workshops. A format of project will be distributed



Co-funded by the  
Erasmus+ Programme  
of the European Union



at the beginning of the school with the request to fill the for-mat with an original project after the first 4 days. During the second part of the day each group will present the abstract of the project at the presence of eminent scientists from Sapienza and abroad. Valuable projects may be implemented thereafter involving interested students.

Estimated total cost of the initiative

**Average 21,000 Euro.**

The main expenses will be for reimbursement of foreign Students and foreign Tutors (21,000 Euro). Other expenses foreseen are related to coffee break/light refreshments during the workshops and webinars. Whether possible a networking dinner will be offered to foreign attendees by organizers.



Co-funded by the  
Erasmus+ Programme  
of the European Union



2022 CIVIS SUMMER SCHOOL (Domains 10 and 17) – “Microbiota in Oral and Digestive Health: From research to clinical practice”

## - Full description of the initiative -

### Description of the topics and the learning gaps to be addressed

Laboratory and clinical activities and a series of seminars will be organized each day addressing the following topics:

- Laboratory/Clinical units main methodology used in microbiome research including sample collection, sample storage and processing, and sequencing, and provide some ideas for translational microbiome studies in inflammatory bowel disease (IBD) and other pathologies, technologies and computational tools used to characterize and study the microbiome, gastroenterology and hepatology clinical unit (inpatients, outpatients, endoscopy, interventional endoscopy, interventional radiology, liver transplantation, cell therapy).

- Concerning the Oral Health, the main concepts on the risk and etiological factors of the most important pathologies of the oral cavity will be explained: dental caries (DC), periodontal diseases (PD) and the oral mucosa and bone diseases (OMBD). All of these diseases as the result of the metabolic activities of microorganisms within the oral biofilm, host factors and altered salivary ecosystem, that favor the emergence and persistence of a dysbiotic microbiota.

Clinical and translational seminars:

- Gut-Liver axis and modulation of gut microbiota,
- Gut-Brain axis and modulation of gut microbiota,
- Microbiota and oral health,
- Metabolic syndrome and gut liver brain axis,
- Metabolic syndrome and oral health,
- Data analysis and statistical approach,
- Machine learning and artificial intelligence,
- Scientific writing and methodology.

The summer school aims to provide a wider view of current gastroenterology, hepatology and microbiome research subjects as well as on oral health than can be provided at any single university by local experts and to encourage students to exchange with researchers and international experts from CIVIS universities. It offers an excellent opportunity for students to consider lab placements and clerkship, further studies or collaborations within the CIVIS Alliance.



Co-funded by the  
Erasmus+ Programme  
of the European Union



## 2022 CIVIS SUMMER SCHOOL (Domains 10 and 17) – “Microbiota in Oral and Digestive Health: From research to clinical practice”

### Target audience

The Summer School complements current curricula at the CIVIS partner universities and facilitates cross-disciplinary interaction and networking between students of different research areas from the CIVIS partners.

### Selection of students

Students will apply with a CV and a motivation letter. The motivation letter will cover both the intentions as well as their specific aims why they want to participate and how they anticipate to will profit from it / how they will use what they will learn.

Selection criteria will include:

- Motivation to participate in the summer school
- Student's CV
- Enrolment at a CIVIS partner university
- Quota of participants for CIVIS partners
- Gender equality (50%/50%)

### Poster Session

Each participant is asked to prepare a poster about their own existent or future research projects or (if this is not possible) a review-style summary of a method or a topic with relationship to the contents of the summer school. Posters will be presented orally in three dedicated lunch sessions (n=10) at the Rome Summer School during which lecturers/cancer experts and CIVIS Summer School participants will be on site for stimulating discussions and networking. Each participant will briefly (5 min) go through their poster and will answer questions. A poster prize will be awarded to the best presenter. This session will further support interdisciplinary exchange and connect people.

### Learning Objectives

Learning objectives all major aspects of Basics & Translational Approaches in HUMAN MICROBIOTA IN ORAL AND DIGESTIVE HEALTH.

### COVID-19 planning

This summer school is planned to be held in presence with both the lecturers/cancer experts and participants coming together in Rome. The organizers are optimistic that the pandemic situation in summer 2022 will allow this. The summer school will be held in strict compliance with the hygiene concept and regulation of Sapienza University of Rome.





**2022 CIVIS SUMMER SCHOOL (Domains 10 and 17) – “Microbiota in Oral and Digestive Health: From research to clinical practice”**

In case that the pandemic situation at other CIVIS partner universities will not allow individual participants or speakers to come to Rome, the organizers will either try to establish connect them online (via Zoom) or will seek for a replacement.

**Location**

Faculty of Medicine and Dentistry (Prof. D. Alvaro)

- Department of Oral Sciences and Maxillofacial Surgery (Prof. E. Barbato)
- Department of Translational and Precision Medicine (Prof. M. Arca)


University Hospital Policlinico Umberto I of Rome, George Eastman Institute of Rome.


- DAI Head and Neck (Prof. A. Greco)
- DAI Internal Medicine and Medical Specialities (Prof. D. Alvaro)

**Faculty**

The Faculty is comprises in renowned experts from the CIVIS partnership Universities, as reported in the provisional agenda.

Actually is comprises 19 experts in the different topics from the University of Bucharest “UB” (1), Brussels “ULB” (2), Madrid “UAM” (2), Rome “SUR” (12), Athens “NKUA” (1) and 1 external partner ; there are 4 female and 15 male lecturers.

|   |                                   |
|---|-----------------------------------|
| <br>UNIVERSITY OF BUCHAREST<br><small>— VIRTUTE ET SAPIENTIA —</small> |                                   |
| <b>- Gratiella Gradisteanu</b>  | Microbiota related research tools |


|  |   |
|--|---|
| <br>UNIVERSITÉ LIBRE DE BRUXELLES |   |
| <b>- Peter Bottenberg</b>  | Basis of Statistics in clinical research                      |
| <b>- Nicolas Baeyens</b>   | Microbiota and neurological diseases with oral manifestations |







Co-funded by the  
Erasmus+ Programme  
of the European Union



|   |   |
|---|---|
|  <b>Universidad Autónoma de Madrid</b> |   |
| <ul style="list-style-type: none"> <li>- <b>Héctor Guadalajara</b></li> <li>- <b>Olatz Lopez Fernandez</b></li> </ul>   | <p>New tools for sharing decision making in medicine</p> <p>Microbiota related research tools</p> |

|  |                 |
|--|-----------------|
|  <p>HELLENIC REPUBLIC<br/><b>National and Kapodistrian University of Athens</b><br/>EST. 1837</p> |                 |
| <ul style="list-style-type: none"> <li>- <b>William Papaioannou</b></li> </ul>   | <p>Chairman</p> |

|   |   |
|---|---|
|  <p><b>SAPIENZA</b><br/>UNIVERSITÀ DI ROMA</p> |   |
| <ul style="list-style-type: none"> <li>- <b>Stefano Ginanni Corradini</b></li> </ul>  | <p>Metabolic syndrome and gut-liver axis</p>  |
| <ul style="list-style-type: none"> <li>- <b>Maria Pia Conte</b></li> </ul>  | <p>Microbiota: the microbiologist perspectives</p>  |
| <ul style="list-style-type: none"> <li>- <b>Livia Ottolenghi</b></li> </ul>   | <p>Microbiota and the oral health I: Dental Decay</p>   |
| <ul style="list-style-type: none"> <li>- <b>Gianluca Gambarini</b></li> </ul>   | <p>Microbiota and the oral health I: Dental Infections and focal disease</p>  |
| <ul style="list-style-type: none"> <li>- <b>Andrea Pilloni</b></li> </ul>   | <p>Microbiota and the oral health I: Periodontal microbiota in health and diseases</p>  |
| <ul style="list-style-type: none"> <li>- <b>Umberto Romeo</b></li> </ul>  | <p>Microbiota and the oral health I: Microbiota and Oral Cancer</p>   |
| <ul style="list-style-type: none"> <li>- <b>Oliviero Riggio</b></li> </ul>  | <p>Scientific Reading and Scientific Writing</p>  |
| <ul style="list-style-type: none"> <li>- <b>Paola Velardi</b></li> </ul>  | <p>Data management and analysis based on artificial intelligence and network medicine</p>   |
| <ul style="list-style-type: none"> <li>- <b>Daniela De Biase</b></li> </ul>   | <p>Omics</p>  |
| <ul style="list-style-type: none"> <li>- <b>Cosimo Durante</b></li> </ul>   | <p>Applied network medicine</p>   |
| <ul style="list-style-type: none"> <li>- <b>Vincenzo Cardinale</b></li> <li>- <b>Lorenzo Ridola</b></li> </ul>                  | <p>Microbiota related research tools</p> <p>Microbiota and the gut-liver axis</p> <p>Metabolic syndrome and oral health</p> <p>Modulation of microbiota</p> |

Course Preparation Assistance:

- Ahmed Mohsen; Department of Oral Sciences and Maxillofacial Surgery, Sapienza University of Rome.



Co-funded by the  
Erasmus+ Programme  
of the European Union



## 2022 CIVIS SUMMER SCHOOL (Domains 10 and 17) – “Microbiota in Oral and Digestive Health: From research to clinical practice”

### External Partners:

- The Gut-Brain axis and related disorders, Jasmohan S. Bajaj, Department of Internal Medicine, Division of Gastroenterology, Hepatology and Nutrition, Virginia Commonwealth University Medical Center, Richmond (USA).

These topics are presented and discussed in two Seminar sessions, plus four workshop sessions. Duration of presentations is limited to ensure proper time for inter-active activities/ self-teachings/ networking/ etc.); e.g., button-based tools (Survey Monkey App) for interaction (Q/A) will be provided; per session a maximum of 2-3 presentations is allowed.

### Estimated Budget

|   |                    |
|---|--------------------|
| Meeting rooms (lecture halls, seminar rooms, computer rooms, poster boards, etc.) will be provided by the Sapienza University of Rome at no costs | 0.00 €             |
| Travel costs and individual support for 20 participants (max. 800.00 € each)  | 16,000.00 €        |
| Travel costs and individual support for 5 speakers (max. 1,000.00 € each)   | 5,000.00 €         |
| <b>Total</b>  | <b>21,000.00 €</b> |

External participants (students and speakers from outside of Rome) of the summer school will receive a CIVIS scholarship of up to 800.00 € to support their travel expenses, housing costs and meals. This scholarship will be paid based on the actual expenses. There will be no financial support for internal students and internal speakers. Travel and housing of the participants will be covered by an individual fellowship (see above). Travel and housing of some of the speakers will be covered by CIVIS.

As the financial means will not be sufficient to cover all costs, the local organizers will seek for additional support by Sapienza University for supported CIVIS projects. Additional funding will be required for additional speakers, lunch, coffee breaks, student assistants (for preparation of the Summer School, technical support during the Summer School, setup of catering, etc.). In case that no support for the costs of coffee breaks and the conference dinner can be organized, the participants will have to pay a small participation fee. Notably, Sapienza University does not charge for the use of rooms or equipment. In this call, we apply for the following support: Costs enabling the participation of 20 students = 16,000.00 €; costs enabling the coverage of the participation of 5 lecturers = 5,000.00 €; in total: 21,000.00 €.



Co-funded by the  
Erasmus+ Programme  
of the European Union



**2022 CIVIS SUMMER SCHOOL (Domains 10 and 17) – “Microbiota in Oral and Digestive Health: From research to clinical practice”**

***Tentative Program - Sessions and social activities for exchange and networking***

|               | Monday                                 | Tuesday   | Wednesday  | Thursday  | Friday  |
|---------------|--|---|--|---|---|
| 09:00 - 11:00 | Students arrival                       | CLINICAL ACTIVITIES   | CLINICAL ACTIVITIES  | CLINICAL ACTIVITIES   | Parallel Session  |
| 11:00 - 13:00 | Students arrival                       | CLINICAL ACTIVITIES   | CLINICAL ACTIVITIES  | CLINICAL ACTIVITIES   | Plenary Session   |
| 13:00 - 14:30 | Registration                           | Lunch break (poster session 1)  | Lunch break (poster session 2)   | Lunch break (poster session 3)  | Closing Ceremony of Sapienza Institution (Dean, Rector) |
| 14:30-16:15   | Opening Ceremony with welcome speeches | <b>Seminar 1:</b><br>1. Microbiota: the microbiologist perspectives (M.P. Conte, SUR) - <b>15 min</b><br>2. 2.1. Microbiota and the gut-liver axis (V. Cardinale, SUR) - <b>15 min</b><br>2.2. Metabolic syndrome and gut-liver axis (S. Ginanni Corradini, SUR) - <b>15 min</b><br>3. Microbiota and the oral health I:<br>3.1. Dental Decay (L. Ottolenghi, SUR) - <b>15 min</b><br>3.2. Dental Infections and focal disease (G. Gambarini, SUR) - <b>15 min</b><br>- <b>Discussion</b> | <b>Workshop 1:</b><br>1. Scientific reading and writing (O. Riggio, SUR) - <b>30 min</b><br>2. Basis of statistics in clinical research (P. Bottenberg, ULB) - <b>30 min</b><br>- <b>Discussion</b>  | <b>Workshops 3:</b><br>1. Microbiota related research tools (G. Gradisteanu, UB) - <b>30 min</b><br>2. Omics (D. De Biase, SUR) - <b>30 min</b><br>- <b>Discussion</b>  | Individual departures of the students                   |
| 16:15 - 17:40 | Setup of work groups                   | <b>Seminar 2:</b><br>1. Microbiota and the oral health II:<br>1.1. Periodontal microbiota in health and diseases (A. Piloni, SUR) - <b>15 min</b><br>1.2. Microbiota and Oral Cancer (U. Romeo, SUR) - <b>15 min</b><br>2. Microbiota and neurological diseases with oral manifestations (N. Baeyens, ULB) - <b>15 min</b><br>3. The Gut-Brain axis and related disorders (J. S. Bajaj, VCU Medical Center, Richmond, USA) - <b>15 min</b><br>- <b>Discussion</b>                         | <b>Workshop 2:</b><br>1. Data analysis and statistical approach in microbiota research (G. Gradisteanu, UB) - <b>30 min</b><br>2. New tools for sharing decision making in medicine (H. Guadalajara & O.L.Fernandez, UAM) - <b>30 min</b><br>- <b>Discussion</b> | <b>Workshop 4:</b><br>1. Data management and analysis based on artificial intelligence (P. Velardi SUR) - <b>30 min</b><br>2. Applied network medicine (C. Durante, SUR) - <b>30 min</b><br>- <b>Discussion</b> |   |
| 18:00         | Welcome dinner                         | Visit to the Museum of the History of Medicine in Sapienza University   | Visit to the Imperial Forums and the Colosseum   | Closing cocktail at Ortobotanico in Sapienza University   |   |