REDUCING BIOFILM RELATED INFECTIONS
from basic research to clinical applications

CHAIRMEN: Lorenzo Drago – Carlo L. Romanò

June, 23rd-24th
Milano Biofilm Meeting 2017

Congress Venue
The Westin Palace Milan
Piazza della Repubblica, 20
20124 Milano

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Welcome to the 4th edition of the "MILANO BIOFILM MEETING"

Microbial biofilms play a key role in periprosthetic and implant-related infection, which in turn generates severe inability and need for complex surgical procedures and medical treatments with increased mortality and possible medico-legal claims and unacceptable social and economical costs.

Understanding biofilms and developing new solutions to detect and fight the striking ability of bacteria to adhere and colonize implanted biomaterials may open a new era in surgery and in treating devastating chronic infections.

To move a step forward in this challenging field, following previous editions of the Milano Biofilm Meeting, held in 2010, 2013 and 2015, we are organizing in Milano a two-day meeting on 23rd and 24th June, 2017, where we would like to cordially invite you to participate. We are glad to inform you that the Milano Biofilm Meeting has been honoured by SIOT (Società Italiana di Ortopedia e Traumatologia) patronage.

Outstanding experts from different Countries and disciplines will take part at the event, sharing the latest information and discussing future pathways and solutions to improve prevention, diagnosis and treatment of biofilm-related conditions, with a particular focus on orthopaedics and trauma.

Looking forward to seeing you in the beautiful Milano, with our best regards,

Lorenzo Drago

Carlo Luca Romanò
CHAIMEN

Lorenzo Drago, Italy
Professor of Clinical Microbiology, University of Milan
Head of Clinical Chemistry and Microbiology Lab & Milano Biofilm Center, IRCCS Galeazzi Research Orthopaedic Institute, Milan.

Carlo Luca Romanò, Italy
Director of the Center of Reconstructive Surgery and Osteoarticular Infection (C.R.I.O.) and co-Director of the Milano Biofilm Center at the IRCCS Galeazzi Research Orthopaedic Institute, Milan.

INVITED FACULTY

Elaine Allan, UK
Senior Lecturer in Molecular Microbiology, UCL Eastman Dental Institute, University College London.

Tiziana Ascione, Italy
Director of the Infectious Diseases Department, Unit of Osteoarticular Infection, D. Cotugno Hospital, Naples.

Giuseppe Banfi, Italy
Director of Scientific Research programs at IRCCS Galeazzi Research Orthopaedic Institute, Milan and at Gruppo Ospedaliero San Donato Foundation; General Director of Fondazione Centro San Raffaele; Full Professor of Clinical Laboratory Medicine at School of Medicine, University Vita-Salute San Raffaele, Milan.

Hans Boesebeck, Germany
Head Medical Affairs Dept. Safety Officer, Senior Medical Consultant at Heraeus Medical, Wehrheim.
Elisa Borghi, Italy
Assistant Professor in Microbiology at the University of Milan.

Elena Bottinelli, Italy
General Director at IRCCS Galeazzi Research Orthopaedic Institute, Milan.

Giorgio Maria Calori, Italy
Vice President of the Scientific Management Commission at Gaetano Pini Orthopaedic Institute, Milan. Professor at the Orthopaedic and Trauma Specialisation Faculty at the University of Milan.

Rodolfo Capanna, Italy
Director of S.O.D. Oncology and Reconstructive Surgery at Azienda Careggi, Lead Surgeon of the Banking of Musculoskeletal Transplants at Azienda Careggi and Coordinator of Musculoskeletal Transplants of Toscana Region.

Massimo Clementi, Italy
Full Professor of Microbiology and Virology, University Vita-Salute San Raffaele, Dean of the Faculty of Medicine, University Vita-Salute San Raffaele University and Vice-Chancellor of the Vita-Salute San Raffaele University, Milan.

Pierangelo Clerici, Italy
Public Health, Epidemiology, Infectious Diseases, Legnano Hospital; Professor at the University of Milan.

Gianfranco Donelli, Italy
Director of the Microbial Biofilm Laboratory at the Fondazione Santa Lucia research hospital, Rome.

Knut Drescher, Germany
Research Group Leader at Max Planck Institute for Terrestrial Microbiology in Marburg and Professor of biophysics at the Philipps-Universität Marburg.

Susanne Feihl, Germany
Clinical microbiologist, Charité – University Medicine Berlin

Jamie Ferguson, UK
Orthopaedic Surgeon at the Nuffield Orthopaedic Centre, Oxford Bone Infection Unit, Oxford University Hospitals.

Lars Frommelt, Germany
Infectious Diseases Specialist and Clinical Microbiologist at Helios Endo-Klinik, Hamburg.

Jan Geurts, The Netherlands
Attending Orthopedic Surgeon, Adult Reconstruction Hip and Infection Unit at Maastricht University Medical Center in the Netherlands.

Guido Grappiolo, Italy
Orthopedics Hip and Prosthesis Unit Director in Humanitas Research Hospital, Milan.

Olivier Guillaume, Switzerland
Post Doc at the AO Research Institute in Switzerland.

Niels Høiby, Denmark
Professor of Medical Microbiology at the University of Copenhagen and also working at the department of Clinical Microbiology at Rigshospitalet in Denmark.

Rob Howlin, UK
Postdoctoral Researcher, University of Southampton.

Garth James, USA
Associate Research Professor in the Department of Chemical and Biological Engineering at Montana State University.

Daniel Kendoff, Germany
Chief Physician and Clinical Director at Orthopaedic & Trauma Department Helios Klinikum Berlin Buch.

Judith Kikhney, Germany
Scientist, Research Associate at Biofilm Center, German Heart Institute, Berlin.
Alexander Kirienko, Italy
Head of the Division of External Fixation and Bone Lengthening at Humanitas Research Hospital, Milan.

Guenter Lob, Germany
Trauma Surgeon and Educator.

Arianna B. Lovati, Italy
Preclinical scientist researcher at the IRCCS Galeazzi Research Orthopedic Institute, Milan, Cell and Tissue Engineering Laboratory.

Kostantinos Malizos, Greece
Professor & Chairman Department of Orthopaedic Surgery & Musculoskeletal Trauma, Orthopaedic Department, University of Thessaly, Member of the University Council at University of Thessaly and Member of the GA of the Medical School.

Roberto Mattina, Italy
Full professor of Clinical Microbiology at the University of Milan.

Martin McNally, UK
Lead Surgeon in the Oxford Bone Infection Unit at the Nuffield Orthopaedic Centre, Oxford University Hospitals and Honorary Senior Clinical Lecturer at Oxford University.

Enzo Meani, Italy
Orthopaedic and Trauma Surgeon at Gruppo Ospedaliero San Donato.

Giulia Morace, Italy
Full Professor at the University of Milan and President of San Paolo Medical School, University of Milan.

Rhidian Morgan-Jones, UK
Consultant Trauma and Orthopaedic Surgeon, University Hospital of Wales.

Anna Teresa Palamara, Italy
Full Professor of Microbiology at La Sapienza University, Rome and President of the Italian Society of Microbiology (SIM).

Franco Parente, Italy
Orthopaedic and Trauma Surgeon, Director of “Unità Operativa di Ortopedia” and Responsible for “Centro di Chirurgia Protesica dell’ Anca e del Ginocchio” Istituto Clinico San Siro, Milan (Gruppo Ospedaliero San Donato). Professor at the University of Milan.

Antonio Pellegrini, Italy
Orthopaedic and Trauma responsible at Gaetano Pini Orthopaedic Institute, Milan.

Giuseppe Peretti, Italy
Full Professor – Orthopaedic and Trauma Surgery at IRCCS Galeazzi – University of Milan.

Lorenzo Pignataro, Italy
Director of the Cervico-Facial Surgery Unit, Director of the Surgery Department, Head of the Head-Neck Area and Professor of Specialist Surgical Science at Ca’ Granda Maggiore General Research Hospital Foundation, Milan.

Mike Reed, UK
Trauma and Orthopaedic Surgeon and Consultant at Northumbria Healthcare, Honorary senior lecturer at the Institute of Cellular Medicine, at the University of Newcastle and Chairman of the British Orthopaedic Association Education Committee.

Giovanni Riccio, Italy
Director of the Infection Deaeases Santa Corona Hospital, Pietra Ligure (Savona).

Roberto Rossi, Italy
Associate Professor of Orthopaedics and Traumatology at the University of Turin and Director of the Orthopaedics and Traumatology Department of Mauriziano Hospital, Turin.
Martin Rottman, France
Professor at Versailles-St Quentin en Yvelines University.

Luca Sconfienza, Italy
Associate professor of Diagnostic Imaging and Radiation Therapy at Department of Biomedical Sciences for Health, University of Milan School of Medicine and Chair of Diagnostic and Interventional Radiology Unit of IRCCS Galeazzi Research Orthopaedic Institute, Milan.

Giuseppe Sessa, Italy
Professor at Catania University - Care and Welfare Systems, Scientific Research and Director of the Department of Surgery at Catania University and Director of the Welfare Department of General and Specialist Surgery at Azienda Ospedaliera Policlinico Universitaria Vittorio Emanuele, Catania.

Alberto Signore, Italy
Associated Professor in the Department of Medical-Surgical Sciences and of Translational Medicine, Nuclear Medicine Unit, Faculty of Medicine and Psychology, University La Sapienza, Rome and Honorary Full Professor in the Department of Nuclear Medicine and Molecular Imaging, University Medical Center, Groningen, The Netherlands.

Sara Torretta, Italy
Otolaryngologist at the Unit of Otolaryngology and Head and Neck Surgery of Fondazione IRCCS Ca’ Granda Maggiore General Research Hospital Foundation, Policlinico, Milan and Assistant Professor for the Department of Clinical Sciences and Community Health at the University of Milan.

Maria Teresa Trentinaglia, Italy
Economic consultant and Professor at Bocconi University, Milan.

Ernesto Valenti, Italy
Orthopaedic Surgeon and Consultant at La Maddalena Hospital, Palermo, Latteri Hospital, Palermo and at Gruppo Policlinico di Monza.

Manuel Villanueva, Spain
Specialist in Orthopaedic Surgery and Traumatology, 4 x Award Winner by the American Academy of Orthopaedic Surgeons (AAOS) for Innovative Surgical Techniques in Reconstructive Hip Surgery, President of the Spanish Association for Ultrasound-guided Surgery. Presently Director of the Sports Medicine Institute Avanfi, Madrid.

Heinz Winkler, Austria
Consultant Orthopaedic Surgeon at Privatklinik Döbling and at Weiniertelklinikum, Director Osteitis Center Vienna and CEO BioTiss Biotechnologie GmbH.

Luigi Zagra, Italy
Head of the Hip Department at IRCCS Galeazzi Research Orthopaedic Institute, Milan and Adjunct Professor at the University of Milan.

Akos Zahar, Germany
Consultant Orthopaedic Surgeon, ENDO-Klinik Hamburg.
JUNE 23, 2017

SESSION 1. KNOWING THE BUG AND ITS BIOFILMS

14:00 - 14:15
Welcome and presentation of the Meeting
Moderators: L. Drago - C.L. Romanò - G. Banfi - P. Clerici (AMCIL)
A.T. Palamara (SIM) - G. Sessa (SIOT)

14:15 - 14:20
Lab Platform and skills in the new biofilm center in Milan
Speaker: Lorenzo Drago

14:20 - 14:30
Characteristics of clinical biofilms
Speaker: Niels Høiby

14:30 - 14:40
Competition for space in biofilms
Speaker: Knut Drescher

14:40 - 14:50
Fungal biofilms: what is the difference?
Speaker: Elisa Borghì

14:50 - 15:00
Animal models of implant-related infections in orthopaedics
Speaker: Arianna B. Lovati

15:00 - 15:10
Modern techniques to study biofilms and possible applications
Speaker: Garth James

15:10 - 15:30
DISCUSSION AND TAKE HOME MESSAGE
Discussant: Lorenzo Drago

15:30 - 16:10
4th SYMPOSIUM WITH ONGOING COFFEE STATION
HERAEUS SYMPOSIUM WITH ONGOING COFFEE STATION
### Session 2: Diagnosing Biofilm-Related Infection

**Moderators:** M. Clementi – G. Donelli – L. Drago

#### 17:10 - 17:20
**Synovial fluid markers to diagnose peri-prosthetic joint infections: an Italian experience**
**Speaker:** Giovanni Riccio

#### 17:20 - 17:30
**What is the role for intra-operative diagnosis and sampling?**
**Speaker:** Luigi Zagra

#### 17:30 - 17:40
**Biopsies or implants: which new technologies?**
**Speaker:** Martin Rottman

#### 17:40 - 17:55
**Discussion and Take Home Message**
**Discussant:** Lars Frommelt

#### 17:55 - 18:05
**Imaging of biomaterial associated infection (1)**
**Speaker:** Luca Sconfienza

#### 18:05 - 18:15
**Imaging of biomaterial associated infection (2)**
**Speaker:** Alberto Signore

#### 18:15 - 18:25
**What a clinician should ask to the microbiologist and vice versa**
**Speaker:** Lars Frommelt

#### 18:25 - 18:35
**Performance of multiplex PCR in the diagnosis of orthopaedic implant-associated infections**
**Speaker:** Susanne Fehl

#### 18:35 - 18:50
**Discussion and Take Home Message**
**Discussant:** Mike Reed

#### 19:30
**Dinner at Armani Restaurant**

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### Session 3: Can We Reduce Burden of Biofilm-Related Infection? Part 1

**Moderators:** K. Malizos - M. Reed

#### 08:20 - 08:30
**Social and economical impacts of biofilms in orthopaedics**
**Speaker:** Kostantinos Malizos

#### 08:30 - 08:40
**Biofilms on cardiovascular devices**
**Speaker:** Judith Kikhney

#### 08:40 - 08:50
**Role of biofilms in nasopharyngeal chronic infections**
**Speakers:** Sara Torretta - Lorenzo Pignataro

#### 08:50 - 09:05
**Bacterial sensing their environment**
**Speaker:** Elaine Allan

#### 09:05 - 09:15
**Limits and new possibilities of systemic antibiotic treatments**
**Speaker:** Tiziana Ascione

#### 09:15 - 09:25
**Biofilms and antibiotic-loaded PMMA**
**Speaker:** Jan Geurts

#### 09:25 - 09:35
**Calcium-based antibiotic-loaded to treat osteomyelitis and septic bone defects**
**Speaker:** Jamie Ferguson

#### 09:35 - 09:45
**Double antibiotic-loaded bone cement: a controlled clinical study**
**Speaker:** Mike Reed

#### 09:45 - 09:55
**Calcium-based antibiotic-loaded coating of implants: a possible solution?**
**Speaker:** Carlo L. Romanò

#### 09:55 - 10:15
**Discussion and Take Home Message**
**Discussant:** Roberto Rossi

#### 10:30 - 11:25
**Novagenit Symposium with ongoing coffee station**
### SESSION 4. CAN WE REDUCE BURDEN OF BIOFILM-RELATED INFECTION? PART 2
Moderators: G. Sessa - H. Winkler

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<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker</th>
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<tr>
<td>11:30</td>
<td>Tantalium and infection: what is the evidence?</td>
<td>Guido Grappiolo</td>
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<td>11:40</td>
<td>In vivo evaluation of antibiotic-loaded thermo-responsive hydrogel as prophylaxis additive for orthopaedic implant infections</td>
<td>Olivier Guillaume</td>
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<td>11:50</td>
<td>A novel approach?</td>
<td>Lorenzo Drago</td>
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<td>12:00</td>
<td>Challenges and solutions to manage infections in orthopaedic oncology</td>
<td>Rodolfo Capanna</td>
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<td>12:15</td>
<td>The future of antibiofilm strategies</td>
<td>Garth James</td>
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<td>12:30</td>
<td>DISCUSSION AND TAKE HOME MESSAGE</td>
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### DISCUSSION AND TAKE HOME MESSAGE
Discussant: Kostantinos Malizos

- **Cavitory defects: cases presentation (1)**
  Speaker: Jamie Ferguson

- **Cavitory defects: cases presentation (2)**
  Speaker: Carlo L. Romanò

- **Segmental defects (1)**
  Speaker: Guenter Lob

- **Segmental defects (2)**
  Speaker: Alexander Kirienko

**ADJURN AND SALUTATIONS**
The Westin Palace Milan is a historic hotel that since years represents a meeting point for local and international travelers. The hotel is conveniently located in a well connected area of Milan and close to Garibaldi and Central railway stations.

There are two international airports in Milan (Linate, approx. 30’ drive from the Hotel and Malpensa, approx. 50’ drive from the Hotel) and there is an international airport located in Bergamo (Orio al Serio, approx 60’ drive from the Hotel).
MBM 2017 Congress Space

Mezzanine Floor

Language

The official language of the congress is English. Simultaneous translation will not be provided.

Badges

Upon registering at the Hospitality Desk located at the Mezzanine Floor you will receive your name badge. You are kindly requested to wear your badge during all Congress sessions and events.

Rooms at The Westin Palace

Check-in time starting from 3:00PM
Check-out time no later than 10:00AM
Milan, the capital of Lombardy, an extraordinary city made of history and innovation. History and skyscrapers coexist in this city that, despite its deep and strong roots, is always looking to the future.

Milan is the engine of the entire Country: with a population of over 1,300,000 inhabitants, growing to about 4,000,000 people with its suburbs, it produces 10% of the country’s GNP; 25% of domestic research, it is home to 10 universities attracting over 4 million tourists every day. It is located in the center of Europe and it is one of Europe’s most accessible cities: 200 destinations linked by 364,000 flights a year, 380 hotels with over 21,000 guest rooms.

Malpensa airport is Southern Europe’s major intercontinental hub but Milan is also served by two additional international airports: Linate, just 7 km from the Duomo, and Orio al Serio, Bergamo.

You will appreciate Milan’s hospitality and elegance. Culture, art, music, fashion, entertainment, TV, sport and research are felt in every corner of the city.

Milan has developed a strong interest towards social integration, it is a concentration of economic activities and collective infrastructures, In Milan everything is within reach and if you want to move from one side of the city to the other, the underground (“Metropolitana”) and surface public mean networks will take you there in few minutes.
So, don’t worry if you are short on time. 2500 years of history and a number of attractions are right in the center of Milan. Here, among wonderful monuments and museums, you will have the possibility to visit one of the unique and world-famous artistic heritages: The Last Supper by Leonardo da Vinci.

We also suggest not to miss:

- The Duomo Cathedral
- Brera Art Gallery
- Pinacoteca Ambrosiana
- Saint Laurence’s Cathedral
- Santa Maria delle Grazie
- Sforza Castle
- Basilica of Saint Ambrose
- Navigli canals
- Porta Nuova and Isola districts
- Vittorio Emanuele II Arcade
- La Scala Opera House
- Poldi Pezzoli Museum
- The Triennale
- Blue Note Jazz Club & Restaurant
- San Siro Football Stadium
- Autodromo di Monza circuit and the Museum of Speed

Walk along Via Montenapoleone and Via Della Spiga to get a taste of top designers’ fashion show rooms and visit Brera quarter, the artistic heart of the city.

Don’t forget to have a look at the Navigli canals and Porta Ticinese, where you will find shops and restaurant and where you can have the famous Milanese “Aperitivo”.

Food and wine lovers will find nothing better than Peck’s, Italy’s first and number one gourmet food and wine shop since 1883!

In Milan you can choose from over 700 restaurants and 150 wine bars: don’t miss the chance to try flavours from all over the world here!

After-dinner hours are even more exciting: over 100 clubs; plus 500 pubs, bars, bistros, cafés, live music bars and a lot more besides; 50 theatres, including the world famous La Scala opera house.

Recent years have seen the introduction of the new concept of Milan’s “Area Metropolitana”, the fourth in the European Union for number of inhabitants after the Ruhr district in Germany, Paris and London. It comprises the provinces of Milan, Lodi, Monza e Brianza, Como, Lecco, Varese, Bergamo, Brescia, Cremona, Pavia and Novara, Alessandria e Piacenza and is home to well over 7 million people on an area of about 12,000 km² which include Alpine zones and regional parks.

Just a few kilometres away from Milan, you could visit many of Italy’s loveliest cities such as Bergamo, Mantova, and Brescia and explore the Lake Region, the Franciacorta vineyards and the spectacular Alps.