Bionic limb reconstruction has grown tremendously in the last decade and faces the challenges of restoring motor and sensory function in patients who have lost their limb. Pioneering leaders in the field of limb reconstruction from both fields of medicine and bioengineering will come together for this International Workshop in Bionic Limb Reconstruction at the Rizzoli Institute in Bologna, Italy, and share their experiences with the newest techniques to improve the function and the quality of life of amputated patients. A world class faculty members will provide personal instruction with lectures, panel discussions, video dissections, and case presentations. Furthermore, a Cadaver Lab session will offer the opportunity to see different surgical techniques such as osseointegration, targeted muscle/sensory reinnervation, regenerative peripheral nerve interface, and many others, with interactive discussions with the audience to optimize teaching and learning time.

Scientific Coordinators
Paolo Sassu, Bologna - Italy
Stefano Zaffagnini, Bologna - Italy
Marco Innocenti, Bologna - Italy

Scientific Secretariat
Francesco Mori, Bologna - Italy
Francesca Alice Pedrini, Bologna - Italy
Luca Salmaso, Bologna - Italy
FACULTY

Oskar Aszmann, Vienna (Austria)
Rickard Brånemark, Gothenburg (Sweden)
Matthew J. Carty, Boston (USA)
Paul Cederna, Ann Harbor (USA)
Christian Cipriani, Pisa (Italy)
Lorenzo Alirio Diaz Balzani, Rome (Italy)
Jennifer Ernst, Hannover (Germany)
Jonathan A. Forsberg, New York (USA)
Alexander Gardetto, Brixen (Italy)
Marco Innocenti, Bologna (Italy)

Lucia Manzoli, Bologna (Italy)
Max Ortiz-Catalan, Gothenburg (Sweden)
John Pak, Seoul (South Korea)
Stanisa Raspopovic, Zurich (Switzerland)
Stefano Ratti, Bologna (Italy)
Paolo Sassu, Bologna (Italy)
Jaimie T. Shores, Baltimore (USA)
Jason Souza, Columbus (USA)
Stefano Zaffagnini, Bologna (Italy)
### Wednesday, October 18th 2023
Rizzoli Orthopaedic Institute - Codivilla Putti Research Center

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.45</td>
<td>Registration</td>
<td></td>
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<tr>
<td>8.15</td>
<td>Opening remarks and introduction to the Workshop</td>
<td>Marco Innocenti, Paolo Sassu, Stefano Zaffagnini</td>
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<tr>
<td></td>
<td><strong>SESSION I - OSSEOINTEGRATION</strong></td>
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<tr>
<td></td>
<td><strong>Moderators: Rickard Brånemark, Jason Souza</strong></td>
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<tr>
<td>8.30</td>
<td>Osseointegration: history and basic science</td>
<td>Rickard Brånemark</td>
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<tr>
<td>8.45</td>
<td>Osseointegration in limb replacement: advantages compared to traditional prosthetic fitting</td>
<td>TBD</td>
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<tr>
<td>9.00</td>
<td>Clinical experience with osseointegration for bone-anchored prostheses</td>
<td>Jonathan A. Forsberg</td>
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<tr>
<td>9.15</td>
<td>Osseointegration in limb replacement: soft tissue considerations</td>
<td>Jason Souza</td>
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<tr>
<td>9.30</td>
<td>Osseointegration in the thumb and fingers</td>
<td>TBD</td>
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<tr>
<td>9.40</td>
<td>Potential complications and expected outcomes</td>
<td>TBD</td>
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<tr>
<td>9.55</td>
<td>The future in osseointegrated reconstruction</td>
<td>Rickard Brånemark</td>
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<tr>
<td>10.15</td>
<td>Discussion</td>
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<tr>
<td>10.30</td>
<td><strong>Coffee Break</strong></td>
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</tbody>
</table>
SESSION II – BIONIC LIMB RECONSTRUCTION
Moderators: Paolo Sassu, Max Ortiz-Catalan

11.00  Challenges in artificial limb reconstruction - Max Ortiz-Catalan
11.15  Bionic limb reconstruction after amputation or devastating peripheral nerve injuries - Oskar Aszmann
11.30  Regenerative peripheral nerve interface (RPNI) for prosthesis control - Paul Cederna
11.45  The myokinetic interface: tracking implanted magnets as a mean for prosthetic control - Christian Cipriani
12.00  Neuromusculoskeletal prostheses and pain neurorehabilitation - Max Ortiz-Catalan
12.15  Bionic lower limb: experiences from the Asan medical centre - John Pak
12.30  Bone-anchored prothesis and TMR: experience from the Campus Biomedico in Rome - Lorenzo Alirio Diaz Balzani
12.45  Discussion

13.00- 14.00   Lunch

SESSION III – ANATOMICAL AND ARTIFICIAL LIMB RECONSTRUCTION
Moderator: Oskar Aszmann, Jaimie T. Shores

14.00  Somatosensory sensations for neuroprosthetic use - Stanisa Raspopovic
14.15  Targeted muscle reinnervation (TMR) for prosthesis and pain control - Jason Souza
14.30  Agonist-antagonist myoneural interface (AMI) in Europe - Jennifer Ernst
14.45  Combining agonist-antagonist myoneural interface (AMI) and osseointegration - Matthew J. Carty
15.00  Targeted sensory reinnervation - Alexander Gardetto
15.15  Bionic limbs and hand transplantation: the Swedish experience - Paolo Sassu
15.30  Bionic limbs and hand transplantation: the Johns Hopkins University experience - Jaimie T. Shores
15.45  Preliminary experience with osseointegration at the Istituto Ortopedico Rizzoli - Stefano Zaffagnini
16.00  Embodiment in limb prostheses - Max Ortiz-Catalan
16.15  Discussion

16.30-16.45  Coffee break

16.45  PANEL DISCUSSION AND INTERACTIVE QUESTIONS ON THE FUTURE OF BIONIC RECONSTRUCTION
       AND LIMB TRANSPLANTATION
       Moderators: Oskar Aszmann, Paul Cederna, Rickard Brånemark, Jaimie T. Shores, Paolo Sassu,
       Marco Innocenti, Stefano Zaffagnini
17.40  Closing remarks
18.00  End of the first day of the Workshop
SESSION IV – SURGICAL TECHNIQUES
Moderator: Marco Innocenti, Paolo Sassu

8.00  Osseointegration: indications and surgical technique - Rickard Brånemark, Jonathan A. Forsberg
8.20  Targeted muscle reinnervation - TMR: indications and surgical technique - Oskar Aszmann
8.40  Regenerative peripheral nerve interface - RPNI: indications and surgical technique - Paul Cederna
9.00  Targeted sensory reinnervation – TSR: indications and surgical technique - Alexander Gardetto
9.20  Agonist-Antagonist myoneural interface- AMI: indications and surgical technique - Matthew J. Carty, Jennifer Ernst

9.40-10.10  Coffee break

LIVE DEMONSTRATION ON CADAVER
Institute of Anatomy, University of Bologna - Sector Anatomy room (In live streaming)

10.10  Introduction to the Institute of Anatomy - Lucia Manzoli, Stefano Ratti
10.20  Osseointegration - Rickard Brånemark, Jonathan A. Forsberg
11.00  TMR - Oskar Aszmann, Jason Souza
11.40  RPNI - Paul Cederna, Paolo Sassu
12.20  AMI - Matthew J. Carty, Jennifer Ernst
13.00  Discussion
13.15  Closing remarks - Marco Innocenti, Paolo Sassu, Stefano Zaffagnini
13.30  End of the Workshop
GENERAL INFORMATION

COURSE VENUE
Marchetti Hall
Rizzoli Orthopaedic Institute
Codivilla Putti Research Center
Via di Barbiano 1/10, Bologna (Italy)
How to reach the venue

REGISTRATION FEE
Physicians € 500,00 (VAT 22% included)
Trainees/Residents** € 250,00 (VAT 22% included)
Biomedical Engineering € 300,00 (VAT 22% included)
** A certificate will be requested upon registration

The registration fee covers:
- Participation in all sessions of the Workshop
- Coffee Breaks and Lunch
- Congress kit
- Certificate of attendance

REGISTRATION
Online registration on:
www.leanevent.it/bionic_limb_reg/

PAYMENT
- CREDIT CARD
- PAYPAL
- BANCOMAT OR BANK TRANSFER (ONLINE)

The proforma invoice will be sent immediately at your email address.

CANCELLATION
Cancellations must be communicated in writing via email to the Organizing Secretariat. For cancellations received before October 8th, the deposit paid will be refunded, net of agency fees (€ 30.00). After this term, no refund is foreseen. The refund will be made at the end of the Congress.

ITALIAN CME CREDITS
CME PROVIDER: I&C SRL- No. 5387- 394054
Credits awarded: 13,9
Training hours: 13 hours
I&C is responsible for the contents, the quality and ethical appropriateness of this CME activity.
The Congress will be accredited for the following professionals Physicians, Physioterapists, Biomedical Laboratory Technician, Orthopedic Technician.

Only attendees working in the above disciplines will be entitled to educational credits.

Places available: 50

METHODOLOGY
Residential

EDUCATIONAL OBJECTIVE

ASSESSMENT QUESTIONNAIRE
Online multiple-choice questionnaire. Guidance regarding the publication of documentation will be provided on site. To earn CME credits for this event, it is mandatory to: physically attend 90% of the training activities, correctly answer at least 75% of questions included in the learning assessment questionnaire, complete the residential training event evaluation form and the I&C (quality and training needs) questionnaire. Warning: Please note that the questionnaire will be available online for 3 (three) days after the end of the Congress.

OFFICIAL LANGUAGE
English is the official language of the Course. Simultaneous translation is not provided.

ORGANIZING SECRETARIAT AND CME PROVIDER
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