BIOSYSMO

BIOREMEDIATION SYSTEMS EXPLOITING SYNERGIES FOR IMPROVED REMOVAL OF MIXED POLLUTANTS

NEWSLETTER

ISSUE 6, AUGUST 2025

IN THIS ISSUE...

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UK Research and Innovation

BIOREMEDIATION: A NATURAL SOLUTION WITH COMPLEX CHALLENGES

Bioremediation harnesses the power of microorganisms and plants to clean up contaminated soils, water, and air, offering a sustainable alternative to conventional remediation techniques. As environmental regulations become stricter and climate change intensifies the need for resilient ecosystems, bioremediation emerges as a critical tool in restoring polluted environments while preserving ecological balance.

Despite its potential, several challenges still hinder the wide-scale deployment of bioremediation strategies. One major hurdle lies in the variability of contaminated sites—differences in pollutant types, concentrations, and environmental conditions can significantly impact the efficiency of microbial activity. Moreover, the delivery and survival of selected microbial strains or consortia in real-world environments remains complex, especially when dealing with harsh or mixed pollutants.

Advancements in microbial biotechnology, synthetic biology, and multi-omics tools offer promising solutions to optimise bioremediation. Projects like BIOSYSMO address these challenges by integrating computational models, genome-scale analysis, and pilot case studies to develop tailored, site-specific bioremediation strategies.

As we move forward, overcoming these technical and logistical obstacles will be key to unlocking the full potential of nature-based remediation. Continued collaboration between scientists, industry, and policymakers is essential for translating lab-scale innovations into impactful environmental applications.

Check out the policy brief that was released by the ALL4BIOREM cluster in case you missed it: https://www.biosysmo.eu/wp-content/uploads/2024/07/Joint-policy-document_EU-bioremediation-cluster_FINAL-REVISED.pdf

ALL4BIOREM CLUSTER UPDATES

MIBIREM and BIOSYSMO meeting

BIOSYSMO and MIBIREM projects co-organised a common meeting on March 19-20 March 2025. The event was hosted at TAUW premises in The Netherlands. Over these two days, presentations highlighted key bioremediation strategies, the current status of field studies in both projects, and discussions on shared challenges and solutions.

The event highlighted the potential for collaboration, knowledge sharing, and scaling impactful solutions for a cleaner environment.

Check out some of the highlights of the meeting in this slideshow: https://youtu.be/-iGbUE4KTC0?si=keqEtrJxScqfgRL

JOINT BIOSYSMO & MIBIREM PRESS RELEASE NOW AVAILABLE

Following the successful joint meeting held at TAUW Group in the Netherlands, BIOSYSMO and MIBIREM have released a common press article highlighting the outcomes of this collaborative event.

The meeting provided an opportunity for project partners to exchange progress updates, align on shared objectives, and strengthen synergies in advancing microbial-based strategies for environmental remediation.

You can read the full press release here: **BIOSYSMO & MIBIREM Press Release**

ALL4BIOREM CLUSTER JOINS LINKEDIN!

We're thrilled to share that ALL4BIOREM is now live on LinkedIn! Follow us to explore the latest in bioremediation, discover cutting-edge research, and engage in collaborative opportunities across the field. Let's grow our network and share knowledge for a greener future!

Check it out here: **https://lnkd.in/gvCtZy6P**

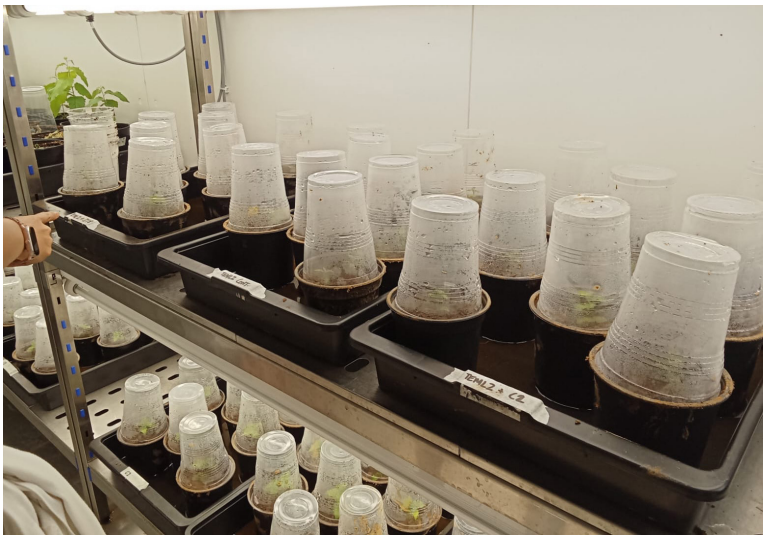
ALL4BIOREM CLUSTER CONTRIBUTES TO THE EUROPEAN COMMISSION'S BIOECONOMY STRATEGY CONSULTATION

We are excited to share our newly submitted Position Paper as part of the European Commission's public consultation on the Bioeconomy Strategy!

In this paper, the **ALL4BIOREM Cluster** underscores the critical role of microbial-based technologies and nature-based solutions in advancing a sustainable and circular bioeconomy across Europe. Discover our key recommendations and forward-looking vision for a greener, more resilient future: **https://lnkd.in/dJ2maxnR**

BIOSYSMO ONGOING WORK

As part of the BIOSYSMO project, the UBU team recently visited the CBGP (UPM) facilities in Madrid, where they had the opportunity to meet with colleagues leading the poplar and phytoremediation tasks. During this visit, they documented the setup of a new experiment that integrates bioaugmentation strategies using microbial consortia from JSI and UBU. These consortia, delivered in various formats (free, immobilised in carriers, etc.), are being tested in soil sourced from UMLP (Site 10) alongside wild-type poplar plants provided by UPM. In the photos below the experimental setup is presented, including pots with plastic glasses used in this innovative phytoremediation study.



OUR TEAM ATTENDING CONFERENCES AND OTHER EVENTS

JSI OPEN DAYS 2025, MARCH 24-29, 2025, LJUBLJANA, SLOVENIA

From March 24 to 29, 2025, the Jožef Stefan Institute held its annual JSI Open Days, honouring the legacy of renowned Slovenian physicist Jožef Stefan, born on March 24. This event celebrates science and innovation, giving visitors the opportunity to explore cutting-edge research, engage with top scientists, and discover the latest advancements in technology.
Learn more about the programme: **https://dnevi.ijs.si/en/programme_2025/**

PINT OF SCIENCE 19–21 MAY 2025, BURGOS, SPAIN

Representing ICCRAM at the University of Burgos, Alberto Soto Cañas delivered an engaging talk titled “If only pollution could go away through the branches” on 19 May at Carmen 13, transforming a local bar into an inspiring venue for scientific discussion His presentation sparked curiosity and conversation about environmental challenges and how sustainable nature-based solutions—like phytoremediation—can make a real difference. The event embodied the spirit of Pint of Science, making cutting-edge research accessible and enjoyable outside traditional formats.

AQUACONSOIL 2025, 16-20 JUNE 2025, LIÈGE, BELGIUM

From 16 to 20 June 2025, BIOSYSMO and the University of Burgos (UBU) joined the global environmental science community in Liège, Belgium for the 40th anniversary edition of AquaConSoil, hosted by the University of Liège.
This milestone event brought together experts in sustainable soil and water management and provided the perfect platform to exchange ideas, solutions, and innovations.
Highlights from this year’s edition included 557 participants from around the world, 168 oral + 33 spotlight presentations and 159 posters. Learn more about the event: https://aquaconsoil.com/

OUR TEAM ATTENDING CONFERENCES AND OTHER EVENTS

1ST INTERNATIONAL LIFE CYCLE ASSESSMENT SYMPOSIUM, 6 JUNE 2025, BARCELONA, SPAIN

The BIOSYSMO project took the spotlight at the 1st International Life Cycle Assessment (LCA) Symposium, held in Barcelona on 6 June 2025. This event brought together researchers and practitioners committed to advancing sustainability through life cycle thinking.

BIOSYSMO was featured in an oral presentation, given by Blue Synergy, sharing insights on how LCA methods are being integrated into bioremediation technologies and environmental restoration strategies.

More about the event: **https://www.sostenipra.cat/en/lca_symposium/#1739180579295-cb853cd9-b81c**

WOMEN RESEARCHERS CONFERENCE OF CASTILLA Y LEÓN, 6-15 FEBRUARY, BURGOS, SPAIN

The ICCRAM Environmental Biotechnology team showcased three of its flagship projects—Tribiome project, biosysmo, and PHYBI-focusing on sustainable agriculture and soil health.

This took place at the 'Women Researchers Conference of Castilla y León' organised by the Centro Nacional de Investigación sobre la Evolución Humana (CENIEH) and the Universidad de Burgos (UBU).

Find out more: **https://www.cenieh.es/en/press/news/xiv-women-and-science-week-burgos-reflects-science-future**

SMART SUSTAINABLE MANUFACTURING EVENT, 6 FEBRUARY 2025, BURGOS, SPAIN

Aqib Hassan Ali Khan, from UBU, participated in the "Smart Sustainable Manufacturing" event, part of the #EPAMission by RUN – European University. During the session held at Universidad de Burgos (UBU), he delivered the presentation titled "Bioremediation of industrial waters as a sustainable industrial technique," contributing to the promotion of more sustainable industrial practices.

See more details here: **https://lnkd.in/d4_yETHw**

OUR TEAM ATTENDING CONFERENCES AND OTHER EVENTS

IJUP 2025, 7-9 MAY 2025, PORTO, PORTUGAL

The Encontro de Investigação Jovem da U.Porto – IJUP 2025 took place from May 7th to 9th, 2025, in Porto, Portugal. CIIMAR represented BIOSYSMO with 1 oral presentation and 2 poster presentations, providing a platform for young researchers to share their work.

For more details, visit: **https://www.up.pt/ijup/ijup-2025/**

SETAC EUROPE, 11-15 MAY 2025, VIENNA, AUSTRIA

During the SETAC Europe 35th Annual Meeting, held in Vienna, Austria, from May 11th to 15th, 2025, the CNRS team contributed with a poster presentation, showcasing research in the field of environmental toxicology and chemistry. This participation supported scientific exchange and collaboration on sustainable environmental solutions.

For more information, visit: **https://www.setac.org/discover-events/global-meetings/setac-europe-35th-annual-meeting/general-info/conference-venue.html**

FEMS2025, 14-17 JULY 2025, MILAN, ITALY

Researchers from JSI and UBU participated in FEMS2025 (Federation of European Microbiological Societies Conference), held in Milan, Italy. Their contribution included both oral and poster presentations, highlighting their latest research in the field of microbiology. Their active participation fostered scientific exchange and visibility for their ongoing work at the European level.

Find out more: **https://fems-microbiology.org/opportunities/fems-micro-milan-2025-congress-and-exhibition**

OUR TEAM ATTENDING CONFERENCES AND OTHER EVENTS

SCIENTIFIC CONFERENCE FOR THE 150TH ANNIVERSARY OF THE INSTITUTE OF AGRICULTURE AND TOURISM, 8-9 MAY 2025, POREČ, CROATIA

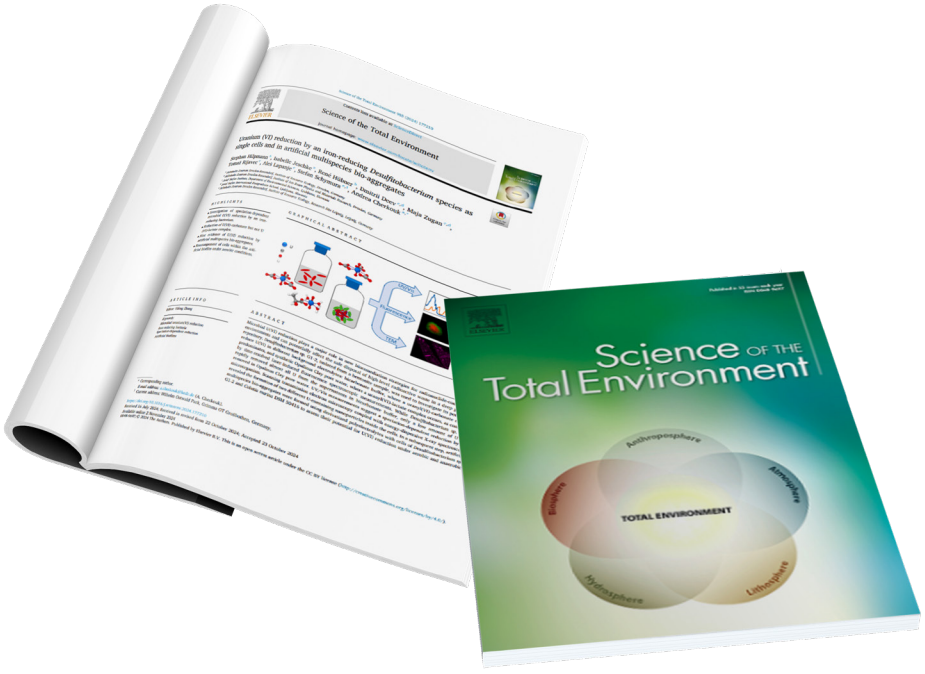
Teams from JSI and UBU took part in the scientific conference themed: “From Science to Innovation for Sustainable Development of Agriculture and Tourism”, celebrating the 150th anniversary of the Institute of Agriculture and Tourism, held in Poreč, Croatia. Their contribution included both an oral presentation and a poster, showcasing their research aligned with the conference theme: From Science to Innovation for Sustainable Development of Agriculture and Tourism.

More information: **http://skup150g.iptpo.hr/program/**

DATASETS NOW AVAILABLE ON ZENODO!

We are excited to announce that new BIOSYSMO datasets have been published on Zenodo, making our research output more accessible to the scientific community and the public.
Explore the data and support open science by visiting **Zenodo.**

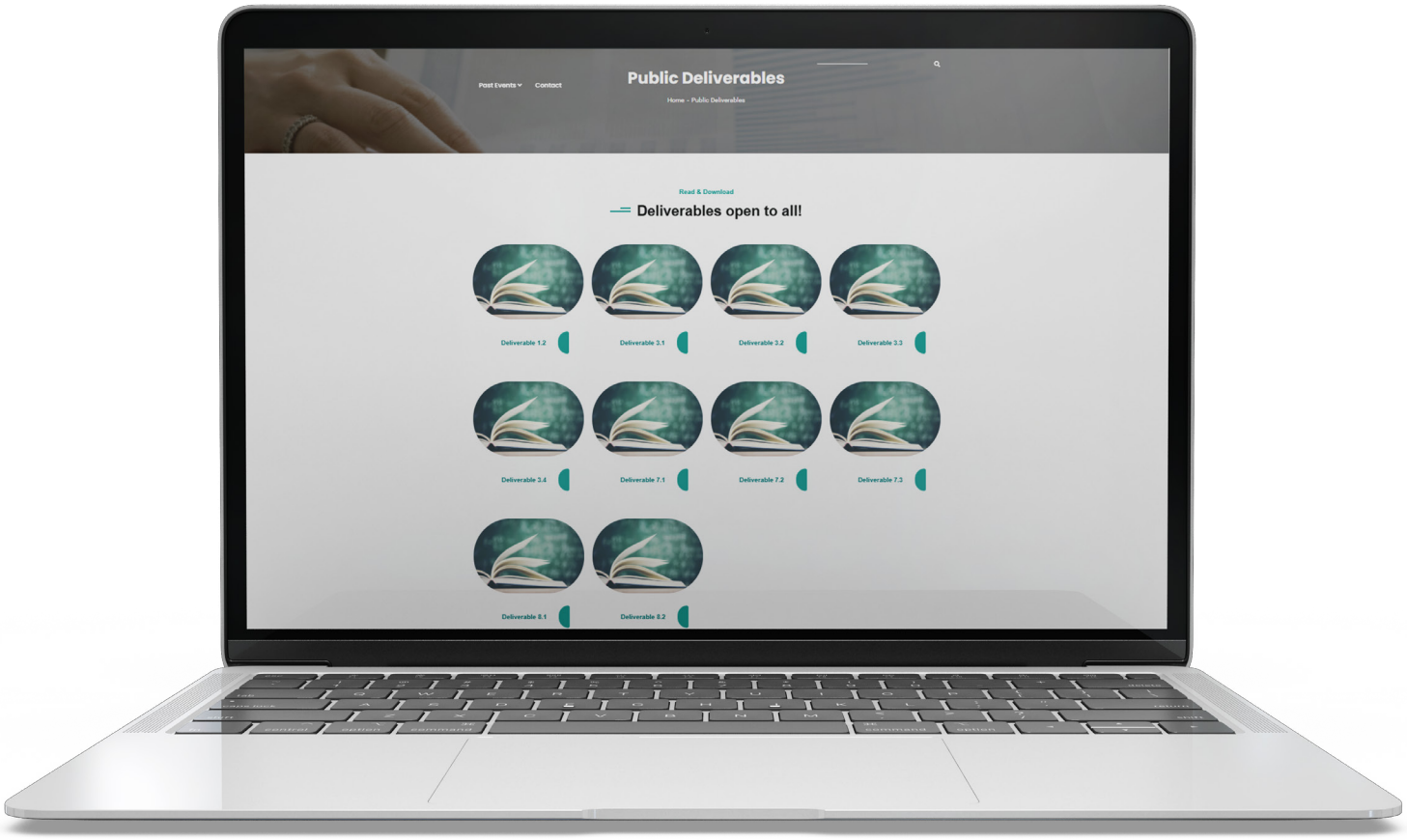
NEW PUBLICATION



A new publication from the JSI team was announced as part of the BIOSYSMO project. The article, titled “Uranium (VI) reduction by an iron-reducing Desulfitobacterium species as single cells and in artificial multispecies bio-aggregates”, has been published in Science of The Total Environment. This study explores the microbial reduction of uranium (VI) by Desulfitobacterium species, both as individual cells and within engineered multispecies bio-aggregates, contributing valuable insights into bioremediation strategies.

https://www.sciencedirect.com/science/article/pii/S0048969724073674?via%3Dihub

EXPLORE OUR PUBLIC DELIVERABLES



Have you visited the Public Deliverables section on our website? This dedicated space provides access to a range of openly available project documents — from characterisation reports and an assessment for microbial consortia selection to our exploitation and dissemination plan, as well as the project management handbook. Discover how BIOSYSMO is advancing research and innovation in bioremediation through transparent and accessible knowledge sharing: **https://www.biosysmo.eu/public-deliverables**

MICROBETECH 2025: ADVANCING MICROBIAL TECHNOLOGIES FOR ENVIRONMENTAL REMEDIATION

The MicrobeTech 2025 event, jointly organised by the **BIOSYSMO** and **BIOREM** projects, took place from 27–29 May 2025 at the Jožef Stefan Institute in Ljubljana, Slovenia. This 3-day hybrid event successfully brought together over 100 participants from academia, industry, and public institutions across Europe (hybrid event).

The first day featured an open workshop, where experts presented the latest advancements in microbial viability, bioreactors, phytoremediation, and computational tools for bioremediation. The interactive poster session that was held throughout the event offered young researchers an opportunity to showcase their work and engage with leading scientists in the field.

MICROBETECH 2025: ADVANCING MICROBIAL TECHNOLOGIES FOR ENVIRONMENTAL REMEDIATION

Day two was dedicated to an interesting summer school, combining theory with a visit to JSI premises where attendees had the chance to take a glance at the facilities where the JSI team is working.

During this day the two poster award winners were announced. More information can be found in our press release: **LINK.** The programme concluded with a cultural excursion to Idrija, providing a unique glimpse into the region's industrial heritage and environmental challenges.

The final day hosted technical meetings between project partners, focusing on upcoming deliverables and collaborative research strategies. On BIOSYSMO's side discussions started with a Policy Co-Assessment, while the biosystem design outcomes and future steps were summarised and the main technology and the expected KPIs were reviewed.

One new press release became available sharing the news from the event.
The 10th press release can be found here:

https://www.biosysmo.eu/newsletters-and-press-releases

NEW DISSEMINATION MATERIAL

Check out our newly designed dissemination material. From posters to banners and agendas you may access them by following this link:

https://www.biosysmo.eu/dc-material

ALL4BIOREM CLUSTER WORKSHOP

MIBIREM and BIOSYSMO meeting

The 9th European Bioremediation Conference (EBC-IX) took place in Chania, Crete, from 15–19 June 2025, commemorating 24 years since its inaugural edition. Co-organised by the Technical University of Crete and the University of Bologna, with support from the European Federation of Biotechnology (EFB), WILEY, and ELSEVIER, EBC-IX will present cutting-edge developments in bioremediation, restoration of contaminated environments, marine pollution management, and circular economy strategies through resource recovery.

The **ALL4BIOREM Cluster** was actively involved in the event, emphasising the pivotal role of bioremediation in achieving sustainable environmental solutions. A dedicated session titled “The Contribution of Environmental Bioremediation to the Clean Industrial Deal in Europe” took place on 19 June 2025. During this session, the ALL4BIOREM Cluster—representing 9 EU-funded projects—hosted a panel discussion featuring prominent experts focused on accelerating bioremediation innovation for a cleaner and more sustainable future.

During the conference Dr. Margarida Pereira from CIIMAR was awarded the first prize for the best oral presentation.

Learn more: https://www.ebc-ix.tuc.gr/en/home

UMLP SUMMER SCHOOL

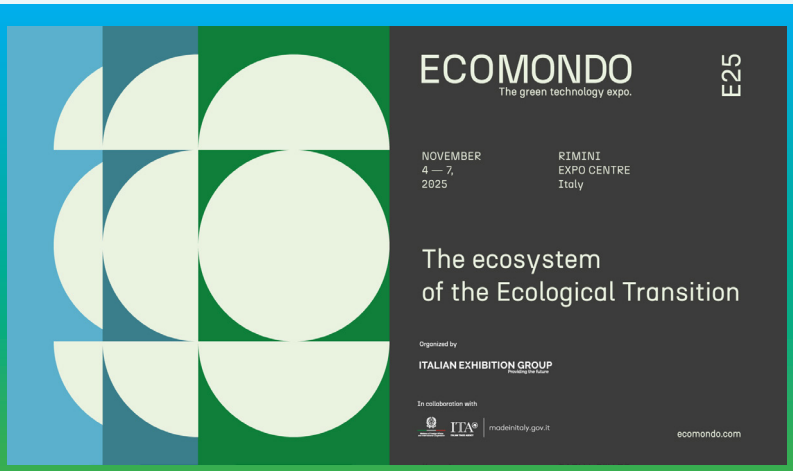
25-29 August 2025, Montbéliard, France

The Soil Remediation Summer School, jointly organised by EDAPHOS and BIOSYSMO Projects, took place from 25 to 29 August 2025 in Montbéliard, France. This five-day programme covered key topics such as monitoring contaminated soils, ecological and ecotoxicological risk assessment, and the implementation of nature-based solutions for soil restoration.

Open to MSc and PhD students in environmental sciences, the training offers a unique opportunity to deepen knowledge in bioremediation.

UPCOMING EVENTS

ECOMONDO 2025, 4-7 November 2025, Rimini, Italy



We are excited to announce our participation in ECOMONDO, the leading event in Europe for ecological transition and green technologies! Join us in Rimini, Italy, to explore the latest in circular economy, bioremediation, sustainable innovation, and more. Discover more about ECOMONDO:

https://www.ecomondo.com/en

ISMET9 – 9th World Conference on Microbial Electrochemistry and Technology, 16–19 September 2025 in Leipzig, Germany

We're pleased to share that BIOSYSMO will be present at the 9th World Conference of the International Society for Microbial Electrochemistry and Technology (ISMET9), taking place from 16 to 19 September 2025 in Leipzig, Germany.

This major international event brings together experts in microbial electrochemical technologies to exchange knowledge, present research, and explore new developments in the field. As part of the conference, LEITAT will contribute with a poster presentation, highlighting ongoing work and insights from the BIOSYSMO project. Find out more: https://www.ismet9.org/

BIOSYSMO at LCM 2025, 9–12 September 2025, Palermo, Italy

We are happy to announce that BIOSYSMO will take part in the 12th International Conference on Life Cycle Management (LCM 2025), held from 9 to 12 September 2025 in Palermo, Italy.

This major international event focuses on the application of life cycle thinking in decision-making for sustainability. BIOSYSMO will contribute to the conference with an oral presentation, by our partner BSY, sharing insights and progress from the project with the global LCM community. For more details about the event, visit: www.lcm2025.org

MEET THE BIOSYSMO CONSORTIUM

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