| | ROOM 1 | ROOM 2 | ROOM 3 |
|---|---|---|---|
| | **REBUS 1/2** | **Algae & Photobioreactor 1/2** | **Societal Impact 2/2** |
| | **Chair:** Marta Del Bianco (ASI)<br>**Co-chair:** Stefania De Pasquale (UNINA) | **Chair:** Jeremy Pruvost (GEPEA)<br>**Co-chair:** Ellen Harrison (U Cambridge) | **Chair:** Christian TAMPONNET (EthoSpace) |
| **8:00** | | The assessment of microalgae biochemistry through NMR non-invasive approach offers new perspectives for their monitoring in photobioreactors.<br>**Gonçalves Olivier** – GEPEA | Round Table<br>**AstroPlants Users** |
| **8:20** | | Extracellular conversion of CO2 into sugars and other functional food ingredients: SweetAir.<br>**Iulian-Zoltan BOBOESCU** – U WAGENINGEN | |
| **8:40** | The REBUS project in the context of the Italian Life Science Roadmap for human space exploration.<br>**Marta del Bianco** – ASI | Assessing the efficiency of cyanobacterium-based BLSS on Mars.<br>**Cyprien VERSEUX** – ZARM | |
| **9:00** | Simulated microgravity affects pollen tube development: a crucial stage in the seed-to-seed cycle of space candidate crops.<br>**Maurizio IOVANE** – UNINA | Optimizing phosphorus removal for municipal wastewater post-treatment with Chlorella vulgaris.<br>**Aigars LAVRINOVIS** – RTU | History of CELSS in Europe.<br>**Christophe LASSEUR** – ESA |
| **9:20** | The Potential of Lunar and Martian regolith simulants as plant growth media.<br>**Antonio Giandonato Caporale** – UNINA | ALGOLIGHT to produce high value products in a compact controlled and intensified photobioreactor adaptable to the life support for human space exploration.<br>**Charlène THOBIE** – ALGOLIGHT. | The MELiSSA foundation and the selection of young scientists involved in research on life support in space: eight years of experience in the POMP project.<br>**Max MERGEAY** – MELiSSA Foundation |
| **9:40** | The REBUS fungal collection for the space organic waste exploitation.<br>**Solveig TOSI** – U PAVIA | Development of innovative processes for the industrial cultivation of high added-value plants in a vertical farming pilot system.<br>**Nico BETTERLE** – U VERONA | |
| **10:00** | **COFFEE BREAK** | | |
| | **ROOM 1** | **ROOM 2** | **ROOM 3** |
| | **REBUS 2/2** | **Algae & Photobioreactor 2/2** | **Terrestrial Applications 1/2** |
| | **Chair:** Marta Del Bianco (ASI)<br>**Co-chair:** Stefania De Pasquale (UNINA) | **Chair:** Pascal Jaouen (Pol Mer atlantique)<br>**Co-chair:** Theodore Besson (ESTEE) | **Chair:** Aude de Clercq (ESA)<br>**Co-chair:** Rob Suters (SEMiLLA) |
| **10:20** | Space organic waste degradation: a new approach to microgreens cultivation.<br>**Silvia TABACCHIONI** – ENEA | Implementation of an automated process for a continuous Limnospira harvesting and the recycling of the culture medium for space applications.<br>**Céline COENE** – QINETIQ | URIDIS, electricity-driven water technology for safe and sustainable toilets without chemical additives.<br>**Korneel Rabaey** – U Ghent |
| **10:40** | Entomological degradation in bio-regenerative systems for space: Study on the efficacy of Hermetia illucens-mediated bioconversion.<br>**Maurizio CALVITTI** – ENEA | The impact of light, temperature and low-dose irradiation on the growth and composition of Limnospira indica, a component of the MELiSSA life support system for space exploration.<br>**Jana FAHRION** – SCK | The greater Caux Seine Area : the land of energy transition & circular economy.<br>**Pierre Van CAENEGEM** – CAUX SEINE |
| **11:00** | Chicory (Cichorium intybus L) for space-oriented production of prebiotic rich plant under controlled conditions for astronaut wellbeing.<br>**Alberto BATTISTELLI** – CNR-IRET | Modeling and experimental campaign of a novel, compact, thin-tube photobioreactor for high volumetric productivity.<br>**Jack HOENIGES** – GEPEA | Microalgae-based biofacade to develop sustainable buildings: system modeling with Modelica<br>**Flora GIRARD** – GEPEA |
| **11:20** | Chicory roots as antidote to spaceflight-induced chronic stress: a translational study in the framework of the ReBUS project.<br>**Francesca ZORATTO** – ISS | Duckweed Production for Space Life Support.<br>**Christine ESCOBAR** – Space Lab | Integrated Water Cycle Demonstration Pilot Project Using MELiSSA Space Technology.<br>**Ernesto LOPEZ BAEZA** – U VALENCIA |
| **11:40** | Morpho-physiological and nutritional responses of Brassica microgreens to heavy ions: an outlook on ionizing radiation from the REBUS project.<br>**Veronica De MICCO** UNINA | Algal dormancy and revivability in space.<br>**Yash PARDASANI** – SAMS UHT | The NEWgenerator Resource Recovery Machine for off-grid wastewater treatment: Case studies for global sanitation in India and South Africa, and implications for space colonies.<br>**Yeh DANIEL** – U FLORIDA |
| **12:00** | ReBUS-Cyanobacteria: The use of the desiccation-, radiation-tolerant cyanobacterium Chroococcidiopsis sp. CCMEE 029 for in situ resource utilization on the Moon and Mars. **Daniella BILLI** – U ROME | Arthrospira – Biomas Recovery.<br>**Rastislav KRAMPL** – Bio X | |
| **12:20** | **LUNCH** | | |
| | **ROOM 1** | **ROOM 2** | **ROOM 3** |
| | **BioMaterial 2/2** | **Urine & Nitrification 3/3** | **Terrestrial Applications 2/2** |
| | **Chair:** Adevnit Makaya (ESA)<br>**Co-chair:** Sandra Ortega (ESA) | **Chair:** Baptiste Leroy (U Mons)<br>**Co-chair:** Aurea Heusser (EAWAG) | **Chair:** Stephan Speidel (ESA)<br>**Co-chair:** Pierre Van Caenegem (CAUX SEINE) |
| **13:30** | Assessing the Recycling Potential of Cupriavidus necator for Space Travel: Production of SCPs and PHAs from Organic Waste.<br>**Pierre JORIS** – TBI | Nitrogen gas production and extraction from urine to compensate for gas leakage during long-term Space missions: Proof of concept for an energy-efficient microgravity-compatible bioreactor.<br>**Marijn TIMMER** – U ANVERS | PhotoBioreactor Space R&D at MEG Science.<br>**Mattia TOFFANETTI** – MEG |
| **13:50** | 3D printing in low-gravity (3DmedLowG project): Challenges in development of hardware and food compatible printing ink.<br>**Gasan Osojnik** – Univerza v Ljubljani | Nitrogen gas and water recovery using the Nitrogenisor bioreactor for crewed Mars mission: A feasibility study based on stochastic mission scenarios.<br>**Tim Van WINCKEL** – U ANVERS | Q&A about MELiSSA terrestrial applications<br>**Aude De CLERCQ** – ESA<br>**Stephan Speidel** – ESA |
| **14:10** | Kombucha-derived biomaterials for life in space.<br>**Agata KOBODZIEJCZYK** – AGH UST | Toward nitrogen recovery from unnitrified urine using Limnospira indica.<br>**Baptiste LEROY** – U MONS | Opportunities for MELiSSA-derived downstream services within ESA's Space Solutions.<br>**Arnaud RUNGE** – ESA |
| **14:30** | | Hydrolysis and nitrification of synthetic urine in continuous packed-bed bench-scale bioreactors.<br>**Carolina ARNAU** – UAB | Advancing Opportunities for Ag-Tech in the Space Environment: Mutation Breeding Programs, Closed-Loop Developments, and Exploring Future Opportunities.<br>**Connor KISELCHUK** – StarLab Oasis |
| **14:50** | **COFFEE BREAK** | | |
| **15:20** | **Pr LIU Hong** – Lunar Palace | | |
| **15:40** | PANELS. Necessary ECLSS demonstrators before the departure to Mars.<br>**Cesare Lobascio** – Thales<br>**Dries Demey** – RedWire<br>**Francesc Godia** – UAB-MPP<br>**Alexis PAILLET** – CNES<br>**Peter Weiss** – Spartan Space<br>**Chairman :** Giorgio Magistrati – ESA | | |
| **16:20** | Conclusion | | |
| **16:40** | **Robert Lindner** – ESA | | |