National Aeronautics and Space Administration

‘Plants for Space Exploration and Earth Applications’ Workshop Report

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Biological & **P**hysical **S**ciences

ISLSWG 'Plants in Space' Workshop Highlights

- Held from September 3-6 2024 in Liverpool, United Kingdom
- Hosted by the European Low Gravity Research Association (ELGRA)
- ISLSWG-member space agencies presented in a panel on the 'Future of Microgravity Related Research'
- 36 speakers consisting of early career and established investigators, in two pre-workshop and four workshop sessions
- 11 posters relevant to the workshop themes. More than 50 of about 200 ELGRA delegates participated in the workshop

ISLSWG ‘Plants in Space’ Workshop Highlights

Cross-agency panel on the microgravity research

Kirima Junya (JAXA) presenting on-going plant research in the Kibo utilization module

Dr. Matt Gilliham University of Adelaide, Director for Australia Plants for Space (P4S)

Discussions and constructive debates followed each scientific session

Workshop participants call for stronger international collaborations

- Significant advances in plant gravitational biology and BLiSS since 2012 ISLSWG workshop in Freiburg, Germany
- More playgrounds on Earth (e.g., Biobase, EDEN-ISS, Ground Test Demonstrator, Moon/Mars simulation). Better to fail on Earth than in space
- Better ground and on-orbit controls
- Conducting plant research in space is difficult. Best practices/lessons learned should be shared widely and faster
- Need for a facility database from the international plant space science community
- Develop avenues for international sharing of spaceflight samples to get bonus science
- Leverage Artemis accords for international cooperation
- Call for the international plant space science community to consolidate behind a big, tangible goal

ISLSWG workshop report will be submitted as a Viewpoint article in March 15, 2025

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Viewpoints – a new addition to the *New Phytologist* Forum

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Tentative Paper Title:

Fostering International Collaboration to Maximize the Value and Impact of Plants for Space Exploration

Excerpts from the Summary of the Paper

‘*Realizing the vision of plants as enablers of space exploration demands innovative approaches, including predictive modeling, synthetic biology, robust Earth analogs, and deployment of instruments in space that can reliably monitor biology. Finally, we advocate building a strong international community that will champion the sharing of resources, facilities, knowledge, and data to accelerate progress*.’