

ELGRA 2024 Detailed Program					
Tuesday 3rd September					
14:00 - 20:00	Registration				
15:45 - 16:00	Opening Ceremony: Welcome to the ELGRA Conference				
16:00 - 17:00	Cross Space Agency talks on the future of gravity related research				
17:00 - 18:00	Introduction to Poster Session				
18:00 - 20:00	Welcome Reception (The Spine)				
Wednesday 4th September					
08:15 - 08:45	Welcome Refreshments & Networking				
08:45 - 09:15	Welcome to the Conference: Presentation on the History & Future of ELGRA				
09:15 - 10:30	ELGRA Medal Talks				
10:30 - 11:00	Refreshment Break & Networking				
11:00 - 13:00	1.1 - Life Sciences: Cell Biology, Genetics and omics	1.2 - Physical Sciences: Soft Matter, Complex fluids and Vibrations	1.3 - Life Sciences: Human Physiology and Performance	11:00 - 13:00	1.4 - Life Sciences: Plant Biology adaption and response to space
11:00	145 - Cell biological experiments in sustainable and multi-usable hardware for studies under altered gravity conditions	39 - Analysis of the mass transport properties of polymeric mixtures under microgravity conditions: DCMIX4 campaign	102 - A Citizen Science Approach to Crowdsourcing Decision Making for Systematic reviews in Space Medicine	11:00	160 - Conserved molecular responses to Spaceflight; Insights from the Advanced Plant Experiment APEX-07
11:15	166 - Gene expression changes of neuronal cell types induced by altered gravity	58 - Soret and thermodiffusion coefficients of C60 THN Tol ternary nanofluid mixture: Evaluation of the DCMIX4 experiment	161 - Theoretical Foundations of Neuroeconomics in Enhancing Astronaut Well-being and Decision-Making in Space	11:15	180 - Plant posture in space: proprioception as a new player in gravitational biology
11:30	170 - Acoustic Levitation of Cyanobacteria in Weightlessness	116 - Role of composition-dependent cross-diffusion on emergence of instabilities in ternary mixtures	190 - Biopsychosocial health considerations for astronauts in long duration spaceflight and interplanetary exploration: A Narrative Review	11:30	24 - LAZY but effective: Deciphering the role of LAZY genes in regulating root architecture
11:45	171 - Influence Of Gravity Variations On The Calcic Activity Of Neuronal Spheroids In Acoustic Levitation	141 - Ultrasonic Cooling System in Microgravity	140 - No Longer Earthlings: Fieldwork on the MEIU Space Exploration Analogues	11:45	13 - How effective is the Random Positioning Machine in providing an analogue for plant spaceflight studies?
12:00	152 - Strain-Dependent Microgravity's Effect on Mouse Kidney Genes Expression	76 - ZBOT-FI: Investigation of liquid removal in microgravity using Screen Channel Liquid Acquisition Device	200 - A toolkit for the design of orbital experiments and their corresponding twin comparative experiments on Earth	12:00	109 - Growth and transcriptomics of Arabidopsis grown under fractional gravity in the EMCS
12:15	118 - Advancements in Microscopic Observation Technology for Space Bio-Experiments	115 - Advances in Soft Matter Characterization Capabilities: For Lunar Exploration: Ddm To Spectroscopy To Computer Vision	182 - The Impact of Microgravity on Dental Procedures: A Parabolic Flight Study	12:15	178 - Fungal exposure to simulated microgravity on several artificial Martian and lunar regoliths
12:30		95 - Two-dimensional emulsions of islands in thin free-standing fluid films		12:30	
13:00 - 14:15 Lunch & Networking					
14:15 - 16:00	2.1 - Life Sciences: Cardiovascular Physiology	2.2 - Physical Sciences: Material Science		14:15 - 15:00	2.4 - Life Sciences: Life Support systems, Agriculture and Life Support Systems
14:15	105 - The Autonomic Response to 60 Minutes of Head-Down Tilt Exposure	74 - Thin liquid film coating and drying under microgravity conditions. Sounding rocket experiments: Wet chemistry deposition		14:15	50 - Developing plant cultivation technologies for space at DLR - from Antarctica to the Moon
14:30	167 - Gravitational effects on lower limb perfusion observed during a parabolic flight.	20 - Convective regimes of planetary atmospheres in theAtmoFlow spherical shell experiment: Solid-body and differential rotation		14:30	2 - TICOC (Targeting Improved Cotton Through Orbital Cultivation); stress resistance in cotton grown on the ISS
14:45	138 - Venous Thrombosis during Spaceflight	183 - How to squeeze your lab setup into a space instrument			
15:00	142 - Point of care ultrasound (POCUS) beyond lower earth orbit and space exploration	40 - Synthesis of catalyst nanomaterials for photoelectrochemical water-splitting in microgravity		15:00 - 16:00	ISLSWG Plants in Space Workshop - Theme 1: Plant Adaptation and Response to Space Environmental Stress
15:15	38 - Abnormal Mitral Valve-Related Parameters Following Long-Duration Spaceflight.	10 - Thermally controlled space habitats using phase change materials		15:00	Welcome Remarks - 203
15:30	99 - Orthostatic Intolerance in a Model of Lunar Descent and Ascent and Possible Countermeasures	185 - ForgeStar - a returnable and reusable in-space manufacturing and research vehicle		15:05	Introduction & Goals - 204
15:45				15:15	Theme 1 Overview - 219
				15:20	15 - Quantum Biology of Plant Magnetoreception: growing plants outside the Geomagnetic Field
16:00 - 16:30	Refreshment Break & Networking			15:40	135 - Engineering plant adaptation to spaceflight: Insights from Arabidopsis, cotton and tomatoes
16:30 - 18:15	2.3 - Gravity Related platforms and Launch Services			16:00 - 16:30	Refreshment Break & Networking
16:30	156 - The SubOrbital Express Shared Module for Cubesat-sized payloads for research in microgravity			16:30 - 18:15	ISLSWG Plants in Space Workshop - Theme 1: Plant Adaptation and Response to Space Environmental Stress Continued...
16:45	154 - The SubOrbital Express 3 and 4 Rideshare Missions in 2022 and 2024 for Microgravity Research			16:30	91 - Ionizing radiation and higher plants in space exploration: challenges, constraints, and opportunities
17:00	60 - ICE Cubes Service for fast and direct access to the International Space Station			16:50	89 - Elucidating the impact of spaceflight on plant immune responses
17:15	136 - Enabling microgravity research - from LEO to the Moon			17:10	48 - Is space a stressful environment for plants?
17:30	30 - Towards a ground-based partial-gravity platform and big scientific data with the GravTower Bremen Pro			17:30	131 - Growing beyond Earth: Telomere tales of Arabidopsis in lunar regolith and on the ISS
17:45	69 - UAS for reduced gravity testing - a comparison against traditional systems			17:50	214 - Discussion on Plant Space Stressors

Thursday 5th Thursday					
08:15 - 18:00	Registration				
08:15 - 08:45	Welcome Refreshments & Networking				
08:45 - 09:00	Opening Remarks			09:00 - 10:40	ISLSWG Plants in Space Workshop - Theme 2: Plants for Life Support Systems (ECLSS) in Space
09:00 - 09:45	3.1 - ELGRA, SELGRA and buildings collaboration with ESA & partners to Drive Space Education			09:00	Theme 2 Overview - 208
09:00	85 - ESA Academy Experiments programme			09:05	132 - Space Crop Production Gaps and Challenges
09:15	124 - Supporting the Next Generation's Pathway to STEM & Space, from Asia to the World			09:25	129 - Future planning of JAXA's plant growth facility for long-term cultivation experiments.
09:30	201 - ESA's Parabolic Flight Activities: An overview of our campaigns, capabilities, and new application routes			09:45	23 - C.R.O.P.® - Combined Regenerative Organic-food Production - Biofilter to close the nitrogen cycle
09:45 - 10:15	Panel Discussion: Space Education - What Next			10:05	128 - ESA Higher plants compartment development for closed regenerative life support system: status and challenges
				10:25	110 - Successes, Challenges, and Delicious Surprises: Lessons Learned from Plants Grown in EDEN ISS in Antarctica
10:15 - 11:00	Refreshment Break & Networking			10:40 - 11:00	Refreshment Break & Networking
11:00 - 13:00	4.1 - Life Sciences: Bone, Muscle and Immune responses	4.2 - Physical Sciences: Granular Media and Emulsions	4.3 - Physical Sciences: Marangoni convection	11:00 - 13:00	ISLSWG Plants in Space Workshop - Theme 2: Plants for Life Support Systems (ECLSS) in Space Continued...
11:00	12 - Changes in endocannabinoid signalling under Space conditions	94 - Granular gases consisting of non-spherical and non-convex particles: experiments, simulations and data analysis	4 - Optical diagnosis of melting bridges in the MarPCM microgravity experiment		
11:15	42 - Lunar Dust and Lunar Gravity Impacts on Human Cellular Function	70 - Onsager variational principle for granular fluids	11 - Enhancing heat transfer during PCM melting via convective flows and container design	11:00	148 - Optimal Greenhouse Design for Applications in Life-Support Systems
11:30	164 - Lessons From Terrestrial Anti-Ageing Trials for Nutraceutical Support of Skeletal Muscle Oxygenation in Microgravity(SMB)	106 - Imaging analysis of emulsions in the EDDI-PASTA experiments onboard the ISS	32 - Design, performance, and preliminary ground results of the MarPCM experiment	11:15	123 - Impact of light on plant growth and product quality in candidate crops for space farming
11:45	184 - High Frequency Impulse for Microgravity (HIFim): The future of exercise countermeasures	67 - Investigating the Vibro-Fluidization of Lunar Regolith in Closed and Open Systems	84 - Patterns and instabilities: understanding Marangoni and buoyant convection in LiBr-H ₂ O binary solution	11:30	Discussion on Plants for ECLSS - 215
12:00	79 - Fetal mouse long bones under continuous microgravity or periods of 1xg centrifugation as countermeasure.	37 - Intrinsic evolution of oil in water emulsions observed by experiments in microgravity on the ISS.	114 - Optimizing Thermal Performance in Microgravity through timely melting-solidification cycle interruption	12:00	ISLSWG Plants in Space Workshop - Theme 3: Advances in Plant Gravitational Biology and Space Genomics
12:15	7 - Monitoring The Degradation Of Bone Elastic Properties Induced By Microgravity: A Proposal.	104 - Rotations and translations in cooling granular gases of spheres	31 - Using thermocapillary flow and vibrations to control a free surface in microgravity	12:00	Theme 3 Overview - 210
12:30	218 - Investigation of the growth rate and antibiotic production of Marine Actinobacteria in the International Space Station	150 - Microgravity Studies of Emulsions Destabilisation within the ESA MAP project EDDI		12:05	71 - Rooted in space: advancements and open questions in plant gravity perception and early gravitropic signaling
12:45				12:35	16 - Recommendations from The ESA Space Omics Topical Team for Plant Space Biology development in Europe
13:00 - 14:15	Lunch & Networking				
14:15 - 15:45	5.1 - Life Sciences: Brain & Nervous System, Psychology	5.2 - Physical Sciences: Multiphase Flows	5.3 - Life Sciences: Gravity Retarded platforms, ageing and biology research	14:15 - 16:00	ISLSWG Plants in Space Workshop - Theme 3: Advances in Plant Gravitational Biology and Space Genomics Continued...
14:15	197 - Perception of self-motion on the International Space Station	3 - Stochastic mitigation in microgravity using baffles and thermocapillary flow	73 - FLUMIAS – a novel facility for Live Cell Imaging on board the ISS		
14:30	14 - Vestibular integration in modified gravity and motion sickness	80 - Particle Structure Formation in Thermo-vibrational Convection Driven by Differentially Heated Corners Under Microgravity	179 - Experiment hardware for life science and astrobiology research in space	14:15	193 - Gravity sensing in plants: the contribution of ground and space experiments. Unresolved questions
14:45	9 - Multisensory integration for verticality perception.	55 The ZBOT-NC Experiment - Effects of Non-Condensable Gases on Propellant Tank Pressurization and Pressure Control	49 - MicroAge Missions: Microgravity as a Model for Accelerated Skeletal Muscle Ageing	14:35	43 - The emergence of angle dependence in gravity sensing columella cells
15:00	29 - Neural Correlates Of Vestibular Adaptation In Cosmonauts After Long Duration Spaceflight	57 - CFD Predictions of Boiling Regime Transitions during Line Chilldown validated against a 1G LN ₂ Experiment	157 - The need for Space Biology Education: A case for Space Omics.	14:55	189 - Controlling plant root electrotopism to optimise root growth in microgravity
15:15	92 - Spatial Orientation Perception Following a Centrifugation-Induced Gravity Transition	90 - Experiments about evaporation of water droplet aerosols in microgravity	202 - Cell Micro-Rheology Under Hypergravity Conditions	15:10	75 - New Depths of Plant Regulation in Spaceflight through profiling of miRNA, mRNA, and ribosome-associated mRNAs
15:30	147 - Lunar and mars gravity induce similar changes in spinal motor control as microgravity	81 - Thermal Characterization of Deployable Pulsating Heat Pipe in Variable Gravity conditions	51 Mitochondrial hydrogen peroxide: mediator of skeletal muscle loss under microgravity and during ageing on earth	15:25	127 Circadian Disruption in Arabidopsis Under Simulated Microgravity: Towards Understanding Plant Timekeeping in Space.
15:45		34 - Energy-Efficient Oxygen and Fuel Production in (Photo-)Electrochemical Devices in Microgravity Environment	144 - Live-cell imaging of astrocytic reactivity adaptations under space conditions using FLUMIAS-ISS	15:40	Discussion on Plant Gravitational Biology/Omics - 216
16:00 - 16:30	Refreshment Break & Networking				
16:30 - 17:30	ELGRA General Assembly				
19:30 - 00:00	Gala Dinner (Hilton Hotel)				

Friday 6th September					
08:30 - 13:00	Registration				
				08:30 - 09:00	Welcome Refreshments & Networking
				09:00 - 10:30	ISLSWG Plants in Space Workshop - Theme 4: Enabling Technologies for Crop Production in Space and Applications for Earth Agriculture
				09:00	Theme 4 Overview - 220
				09:05	122 - NASA Human Research Program Food and Nutrition Risk Strategy
				09:25	149 - A Canadian roadmap towards a Lunar Agricultural Module
				09:45	5 - Verification of root hydrotropism by spaceflight experiments and its application to agriculture
10:00 - 11:00	Welcome Refreshments & Networking			10:05	134 - European Space Agency's Plant Biology Research for Future Space Exploration
11:00 - 13:00	6.1 - Life Sciences: Brain & Nervous System, Psychology	6.2 - Physical Sciences: Multiphase Flows		10:25 - 11:00	Refreshment Break & Networking
11:00	25 - Prisoners of Gravity: Gravity as a Hyper-Prior for Human Behaviour	137 - CRYSLIS - Acoustic technologies for a European Cryogenic Storage and Refuelling In-orbit Demonstration		11:00 - 13:00	ISLSWG Plants in Space Workshop - Theme 4: Enabling Technologies for Crop Production in Space and Applications for Earth Agriculture
11:15	112 - Assessment of Spaceflight Associated Neuro-Ocular Syndrome Countermeasures in a Spaceflight Analog	159 - Fluids Experiments in Commercial Sub-orbital Spaceflight		11:00	19 - P4S: an international research centre re-designing plant, food and bioresource production for Space and Earth
11:30	26 - How gravity contributes to perceived weight	68 - Filling of a tank with storable liquid under normal gravity and microgravity conditions		11:20	139 - Lunar Effects on Agricultural Flora (LEAF) Beta Experiment, An Overview
11:45	87 - VENTRICULAR VOLUME CHANGES ACROSS MULTIPLE SPACEFLIGHTS	83 - Data-driven thermodynamic modeling of microgravity sloshing: outcomes from the 83rd ESA parabolic flight campaign		11:40	126 - Leafy Greens: Exploring Physiology and Consumer Acceptability on Earth and Space-Simulated Environments using Digital Technologies
12:00	125 - Unveiling Retronasal Aromas and Mouthfeel Perception in Space-Simulated Environments: Improving Palatability for Extended Missions	88 - Experimental Characterisation of Sloshing-Induced Thermal Mixing under Gravity-Dominated and Microgravity Conditions for Space Applications		11:55	196 - Introduction of Kibo utilization missions for plant production in microgravity
12:15	86 - White Matter Changes After Long-Duration Spaceflight - New Insights			12:10	35 - Gene circuits to engineer plant form and function for agriculture on Earth and beyond
12:30	199 - Oxytocin's Role in Space Team Dynamics and Cognition: A Neuroeconomic Perspective			12:25	Discussion on Enabling Technologies - 217
				12:45	221 - Next Steps and Plans for Drafting New Phytologist Viewpoint Article
13:00 - 14:00	Farewell Lunch				
14:00 - 17:00	UKSA Workshop - What next for UK Gravity Related R&D (from microgravity to Lunar and beyond)				