

CRITICAL PATH ROADMAP DISCIPLINE(S)	PRIMARY SPECIES / TYPE	GROUND EXPERIMENT TITLE	NASA OBPR - TASK BOOK							
			Year Experiment Was Listed in Book							
			1995	1996	1997	1998	1999	2000	2001	2002
Environmental Health; Advanced Life Support	Air	Advanced SERS-Based Sensor for Monitoring Air Quality in Space Cabin Environments							2001	2002
Environmental Health; Radiation Effects; Clinical Capabilities	Air	Advanced Technology Development - Biosensors						2000	2001	2002
Environmental Health; Advanced Life Support	Air	Advancement in Determining Hazardous Volatile Organic Compounds in Air	1995	1996	1997	1998				
Environmental Health; Advanced Life Support	Air	Air Quality Monitoring Sensor Using Long Pathlength FTIR		1996						
Environmental Health; Advanced Life Support	Air	Air Quality Monitoring Sensor Using Open Path Fourier Transform Infrared (FTIR)			1997					
Environmental Health; Advanced Life Support	Air	Autonomous Gas Sensors Based on Tunable Diode Lasers							2001	2002
Environmental Health	Air	Bioluminescent Bioreporter Integrated Circuits for Monitoring Spacecraft Environments					1999	2000	2001	2002
Environmental Health; Advanced Life Support	Air	Compact, Rapid Response Optical Air Quality Monitor		1996	1997	1998				
Environmental Health; Advanced Life Support	Air	Development of a Tunable Diode Laser/Cavity Ring- Down Sensor for Monitoring Spacecraft Air Quality						2000	2001	2002
Environmental Health; Clinical Capabilities; Advanced Life Support	Air	Electronic Nose				1998	1999			
Environmental Health; Clinical Capabilities; Advanced Life Support	Air	Electronic Nose Re-Flight						2000		
Environmental Health; Advanced Life Support	Air	Identification and Quantification of Volatile Organic Emissions from Living Tomato and Soybean Plants, Solid Waste Composter and Food; Identification and Quantification of Volatile Organic Emissions from Living Plants, Solid Waste Composter and Food					1999	2000	2001	
Environmental Health; Advanced Life Support	Air	Identification and Quantification of Volatile Organic Emissions from Healthy and Stressed Tomato Plants				1998				
Environmental Health; Advanced Life Support	Air	In-site, Remote Chemical Sensors Based on Thin Magnetic Films; n-situ, Remote Chemical Sensors Based on Thin Magnetic Films			1997	1998	1999	2000		
Environmental Health; Advanced Life Support	Air	Laser Based Absorption Sensors for Trace Gas Monitoring in a Spacecraft Environment				1998	1999	2000	2001	2002
Environmental Health; Advanced Life Support	Air	Mesosopic Instrumentation Miniature FTIR for Environmental Monitoring and Chemical Analysis				1998	1999	2000	2001	2002
Environmental Health; Advanced Life Support	Air	Microfabricated Optical Biosensor Arrays for Air Quality Monitoring							2001	2002
Environmental Health; Advanced Life Support	Air	Micro-machined Drift Tubes for Ion Mobility Spectrometry: Studies Toward a Hand-Held Volatile Organic Analyzer for Mars Missions							2001	2002
Environmental Health; Advanced Life Support	Air	Miniature Quadrupole Mass Spectrometer					1999	2000		
Environmental Health; Advanced Life Support	Air	Miniature Quadrupole Array Mass (QMSA) Spectrometer Flight Instrument							2001	
Environmental Health; Advanced Life Support	Air	Modeling, Monitoring and Fault Diagnosis of Spacecraft Air Contaminants	1995	1996	1997	1998				
Environmental Health; Advanced Life Support	Air	Multigas Sensor for Advanced Life Support	1995	1996	1997					
Environmental Health; Advanced Life Support	Air	New Technology for Optically-Based Multifunctioned Chemical Sensors			1997	1998				
Environmental Health; Advanced Life Support	Air	Novel Laser-Based Gas Sensors for Trace Gas Detection in a Spacecraft Habitat						2000	2001	
Environmental Health; Advanced Life Support	Air	Pilot Study: Acoustic attenuation as a realtime gaseous process control monitor							2001	2002
Environmental Health	Air	SAW-Based Microhygrometer					1999	2000		
Environmental Health; Advanced Life Support	Air	Second Generation Electronic Nose							2001	2002
Environmental Health	Air	Staged Decompression to a 3.5 PSI EVA Suit Using an Argon-Oxygen (ARGOX) Breathing Mixture; Staged Decompression with an Argon-Oxygen (ARGOX) BREATHING Mixture to 3.5 PSIA				1998	1999	2000	2001	
Environmental Health; Advanced Life Support	Air	Micro-mass Spectrometer for Containment Gas Monitoring		1996	1997	1998	1999			
Environmental Health; Food & Nutrition; Advanced Life Support	Air	NSCORT: Bioregenerative Life Support		1996	1997	1998				
Environmental Health	Microbe	An Advanced Approach to Simultaneous Monitoring of Multiple Bacteria in Space	1995	1996	1997	1998				
Environmental Health; Advanced Life Support	Microbe	Development of Sample Collection and Preparation Technology for Gene-Based Microbial Monitoring of Recycled Water and Air				1998				
Environmental Health; Advanced Life Support	Microbe	DNA Microchip-Based Microbial Monitoring					1999	2000	2001	2002
Environmental Health	Microbe	DNA Probe Design for Preflight and Inflight Microbial Monitoring				1998	1999	2000		
Environmental Health	Microbe	Enhanced Detection and Identification of Microbial Proteins Using MALDI-TOFMS							2001	
Environmental Health; Advanced Life Support	Microbe	ISS Bio-contamination Project: Optical Methods for Detection and Sterilization of Pathogens in Water, Air, and Food Supplies							2001	2002
Environmental Health	Microbe	Liquid Phase Piezoelectric Immunosensors	1995	1996	1997	1998				
Environmental Health; Advanced Life Support	Microbe	Microbial Detection							2001	2002
Environmental Health; Immunology, Infection & Hematology; Advanced Life Support	Microbe	Microorganisms in the Spacecraft Environment							2001	2002
Environmental Health; Advanced Life Support	Microbe	Monitoring of Physiological Analytes/ Microbial Contamination in Water								2002
Environmental Health	Microbe	NSCORT: Environmental Health	1995	1996	1997					
Environmental Health; Advanced Life Support	Microbe	Rapid Bacterial Testing for Spacecraft Water; Rapid Bacterial Testing of Spacecraft Water		1996	1997	1998	1999	2000	2001	2002
Environmental Health; Immunology, Infection & Hematology	Microbe	Spaceflight Effects on Microbial Susceptibility to Antibiotics	1995	1996	1997	1998				

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Environmental Health; Clinical Capabilities; Advanced Life Support	Other	Environmental Biomedical Research Data Center; Environmental Biomedical Stress Data Center	1995	1996	1997	1998	1999			
Environmental Health; Clinical Capabilities	Other	Improved Bubble Detection for EVA							2001	2002
Environmental Health; Radiation Effects; Human Behavior & Performance; Clinical Capabilities	Other	Miniature Time of Flight Mass Spectrometer				1998	1999	2000		
Environmental Health; Clinical Capabilities	Other	Multianalyte Biosensor with Chips for Human and Environmental Monitoring						2000		
Environmental Health; Clinical Capabilities; Advanced Life Support	Other	Multianalyte Biosensor with Chips for Human and Environmental Monitoring						2000	2001	2002
Environmental Health; Radiation Effects	Other	Towards Intelligent Distributed Bioluminescence Detection of Biological Contamination and Stressors					1999	2000	2001	2002
Environmental Health; Advanced Life Support	Water	Capillary Electrophoretic Methods for Monitoring Spacecraft Water Quality	1995	1996	1997	1998				
Environmental Health; Advanced Life Support	Water	High Performance Polymers for Cation Separation and Detection in Aqueous Environments			1997	1998				
Environmental Health; Advanced Life Support	Water	Lab-on-a-Chip Technologies for Advanced Environmental Monitoring and Control (AEMC)							2001	2002
Environmental Health; Advanced Life Support	Water	Microgravity Compatible Reagentless Instrumentation for Detection of Dissolved Organic Acids and Alcohols in Potable Water					1999	2000	2001	2002
Environmental Health; Advanced Life Support	Water	Micro-Scale Fluidic Technologies for AEMC					1999	2000		
Environmental Health; Advanced Life Support	Water	Miniaturized Liquid Chromatography		1996	1997	1998	1999	2000		
Environmental Health; Advanced Life Support	Water	Multisensor Array for Monitoring Water Quality on Spacecraft and Planetary Habitats						2000	2001	2002
Environmental Health; Advanced Life Support	Water	Rapid, Specific Chemical Sensors and Test Kit Methodologies for Spacecraft Water Quality Monitoring							2001	2002
Environmental Health; Advanced Life Support	Water	Remediation of Biofilms Formed by Bacteria Isolated from Spacecraft Water Systems		1996	1997	1998				
Environmental Health; Advanced Life Support	Water	Surface Control of Electrochemical Sensors for Water Reclamation							2001	2002
Environmental Health; Advanced Life Support	Water	A New Reagentless Carbon Analyzer for Water Quality Monitoring in Space					1999	2000	2001	