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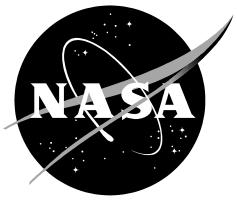

Journal Papers from Kennedy Space Center Advanced Life Support and Plant Space Biology

Compiled by Raymond M. Wheeler
NASA Surface Systems Office
Kennedy Space Center, FL 32899

National Aeronautics and
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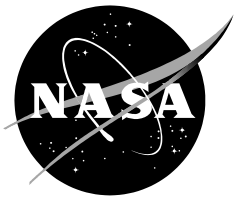

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Abstract

NASA Kennedy Space Center's (KSC's) life sciences research team began assembling in the mid 1980s to support life science payloads for the Space Shuttle Program. To accommodate this, biological research laboratories were constructed at Hangar L on the Cape Canaveral Air Force Station to support visiting investigators in preparing their flight experiment payloads. The group lead and founder, Dr. Bill Knott, pursued the idea of co-utilizing these facility investments to support other research needs for the agency; in particular, the use of the plant growth chambers and microbiological laboratories. This led to a close synergy between the space biology research, and the Closed Ecological Life Support System (CELSS) Program, later renamed the Advanced Life Support Program. To support additional testing, the CELSS Program sponsored construction of the Biomass Production Chamber at Hangar L, a large closed test chamber for growing plants and testing bioregenerative life support concepts. This work at Hangar L continued until 2003, when the laboratories were moved to the Space Life Sciences Laboratory at KSC. Since then, the bioregenerative life support testing has continued, along with the payload development and support activities, which have since moved to the Space Station Processing Facility. Throughout this time period, the KSC life science research staff had opportunities to collaborate with external investigators, apply for supplemental grants for research, and continue to conduct program-directed research in the area of bioregenerative life support. This document provides a listing of published papers, proceedings, book chapters, technical memoranda, and theses/dissertations related to bioregenerative life support and space biology work at KSC.

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13. ABSTRACT *(Maximum 200 words)*

NASA Kennedy Space Center's (KSC's) life sciences research team began assembling in the mid 1980s to support life science payloads for the Space Shuttle Program. Biological research laboratories were constructed at Hangar L. on the Cape Canaveral Air Force Station to support visiting investigators in preparing flight experiment payloads. Dr. Bill Knott pursued the idea of co-utilizing these facility investments to support other research needs; in particular, the use of the plant growth chambers and microbiological laboratories. This led to a synergy between space biology research and the Closed Ecological Life Support System Program. To support additional testing, this program sponsored construction of the Biomass Production Chamber at Hangar L. This work continued until 2003, when the laboratories were moved to Space Life Sciences Laboratory at KSC. Since then, bioregenerative life support testing has continued, along with payload development and support activities. Throughout this period, KSC life science research staff had opportunities to collaborate with external investigators, apply for supplemental grants for research, and continue to conduct program-directed research in bioregenerative life support. This document provides a listing of published papers, proceedings, book chapters, technical memoranda, and theses/dissertations related to bioregenerative life support and space biology work at KSC.

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