

AMES LIFE SCIENCE DATA ARCHIVE: TRANSLATIONAL RODENT RESEARCH AT AMES

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ABSTRACT

The Life Science Data Archive (LSDA) office at Ames is responsible for collecting, curating, distributing and maintaining information pertaining to animal and plant experiments conducted in low earth orbit aboard various space vehicles from 1965 to present. The LSDA will soon be archiving data and tissues samples collected on the next generation of commercial vehicles; e.g., SpaceX & Cygnus Commercial Cargo Craft.

To date over 375 rodent flight experiments with translational application have been archived by the Ames LSDA office. This knowledge base of fundamental research can be used to understand mechanisms that affect higher organisms in microgravity and help define additional research whose results could lead the way to closing gaps identified by the Human Research Program (HRP). This poster will highlight Ames contribution to the existing knowledge base and how the LSDA can be a resource to help answer the questions surrounding human health in long duration space exploration. In addition, it will illustrate how this body of knowledge was utilized to further our understanding of how space flight affects the human system and the ability to develop countermeasures that negate the deleterious effects of space flight.

The Ames Life Sciences Data Archive (ALSDA) includes current descriptions of over 700 experiments conducted aboard the Shuttle, International Space Station (ISS), NASA/MIR, Bion/Cosmos, Gemini, Biosatellites, Apollo, Skylab, Russian Foton, and ground bed rest studies. Research areas cover Behavior and Performance, Bone and Calcium Physiology, Cardiovascular Physiology, Cell and Molecular Biology, Chronobiology, Developmental Biology, Endocrinology, Environmental Monitoring, Gastrointestinal Physiology, Hematology, Immunology, Life Support System, Metabolism and Nutrition, Microbiology, Muscle Physiology, Neurophysiology, Pharmacology, Plant Biology, Pulmonary Physiology, Radiation Biology, Renal, Fluid and Electrolyte Physiology, and Toxicology.

These experiment descriptions and data can be accessed online via the public LSDA website (<http://lsda.jsc.nasa.gov>) and information can be requested via the Data Request form at <http://lsda.jsc.nasa.gov/common/dataRequest/dataRequest.aspx> or by contacting the ALSDA Office at: Alison.J.French@nasa.gov