

Discovery Through Biospecimen Sharing: The NASA Biological Institutional Scientific Collection (NBISC)

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NASA Ames Research Center has fostered collaborations with other NASA centers, universities, and international space agencies by sharing non-human biospecimens from spaceflight and space-relevant ground experiments since the 1960s. These collaborations have advanced the field of space exploration by helping to maximize the data gained from spaceflight experiments. Non-human tissues archived from experiments funded by NASA's Space Biology and Human Research Programs (HRP) are available for request through the NASA Life Sciences Portal (NLSP) and distributed by the NASA Biological Institutional Scientific Collection (NBISC). NBISC coordinates closely with the Ames Biospecimen Sharing Program (BSP) which is responsible for sample collection from spaceflight and ground experiments. NBISC currently houses more than 90,000 biospecimens in its facility at NASA Ames. Until recently, NBISC primarily distributed samples from Space Biology funded research. In 2022 NBISC partnered with HRP Space Radiation Element to also archive samples from studies which primarily involve rodents exposed to galactic cosmic radiation simulations at the NASA Space Radiation Laboratory (NSRL) and other analog facilities. In this presentation we will highlight several success stories of analyses carried out using archived NBISC samples received by researchers in recent years and will detail the process for proposing and receiving samples from NBISC. Making available these 90,000+ unique biospecimens to the scientific research community, NBISC not only functions as a resource for storing and distributing non-human biospecimens, but as a warehouse for future discoveries for the benefit of NASA and humankind.