Space Life Sciences Research Highlights

Web Site Makes NASA-Supported Research Information Easily Available

https://taskbook.nasaprs.com

The Life and Physical Sciences Task Book, a publicly available online database, compiles descriptions of research supported by NASA's Space Biology, Physical Sciences, and Human Research Program research areas. Data include project descriptions, contact information for investigators, project status updates, publications, and media coverage resulting from research. The database contains records of projects from FY1995 to the present, is frequently updated, quickly searchable, and user-friendly.

More than 200 miles above Earth's surface, six astronauts orbit the planet on the International Space Station (ISS), the world's highest scientific laboratory. The ISS may be the most visible part of NASA's scientific research aimed at helping humans achieve safe and productive travel in space—from low-Earth orbit to beyond—but that research is led and supported by hundreds of scientists down on the ground. These NASA-supported researchers design, construct, and carry out experiments that take place on the ISS as well as in facilities on Earth. They do experiments to determine how physical systems respond to spaceflight, how spaceflight affects humans, and how the microgravity environment can reveal information about fundamental biological processes.

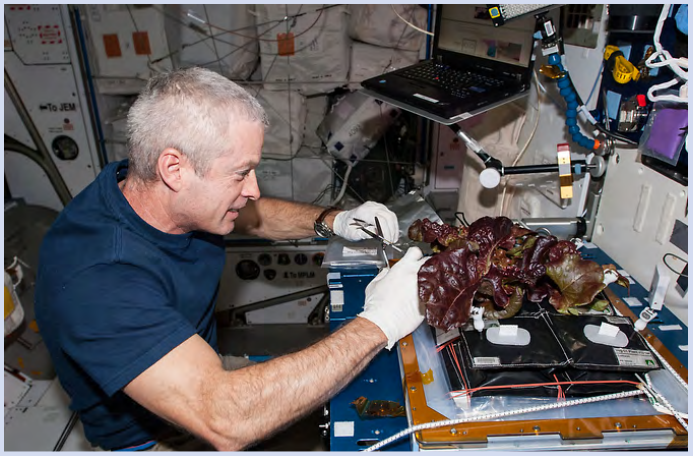
Descriptions of this NASA-funded research are publicly available online through the NASA Space Life and Physical Sciences Research and Applications (SLPSRA) Division Task Book (*https://taskbook.nasaprs.com*). Also included are projects from the National Space Biomedical Research Institute (NSBRI), a NASA-funded consortium devoted to the study of the health risks of long-term spaceflight.

NASA managers at all levels, Office of Management and Budget staff, the U.S. Congress, the scientific community, National Academy of Sciences committees, and the public all use the Task Book to find, understand, track, and use the results of Life and Physical Sciences research done between 1995 and the present. This "one-stop shop" for Space and Life Sciences results is especially useful for scientists proposing new ISS experiments to understand what has already been done so they can optimize their science and avoid duplication.

A Wealth of Information

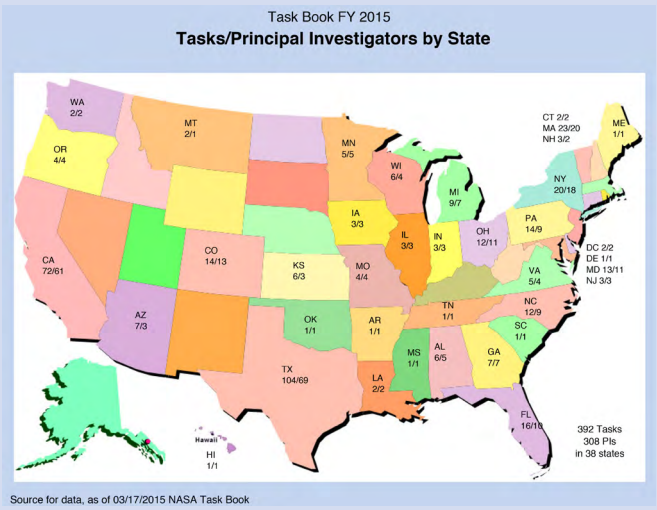
Since life first appeared on Earth more than 3.5 billion years ago, organisms have evolved to survive an amazing array of conditions, but one constant has always been gravity. The ISS provides a unique opportunity to study life and physical systems without that constant. Every year, SLPSRA funds dozens of new projects that examine the impact of microgravity and the space environment on life and physical processes in experiments performed on the ground or on-board the ISS.

When a project is funded, an entry is made in the Task Book noting basic information about the "task," such as who received the award, their contact information, names of co-investigators, and numbers of students and post-docs involved in the research. A "Task Description" explains the project in general language, and a final section describes the expected impact the project will have, along with any Earth benefits.



In the International Space Station's Harmony node, NASA astronaut Steve Swanson, Expedition 40 commander, harvests a crop of red romaine lettuce plants that were grown inside the station's Veggie facility. More information on the Veggie project, and other projects, may be found by searching the Task book. Credit NASA/Alex Gerst (10 June 2014)

In each year of the project's funding, a new page is added to its Task Book entry. As the research advances, investigators update their Task Book record with current



This U.S. map displaying the distribution by state of Tasks/Principal Investigators supported by NASA's Space Biology, Human Research, and Physical Sciences programs is just one example of Task Book's Maps/Metrics information capability.

progress and an updated bibliography of publications resulting from the NASA-funded research. The bibliography includes articles in peer-reviewed journals, books and book chapters, patents, and significant media coverage. Online resources can be easily accessed through hyperlinks.

The Task Book provides two ways to view data visually via the Maps/Metrics link. Counts of tasks and principal investigators funded in specific fiscal years can be displayed by state on a U.S. map. Users can choose to view data for a single NASA program or for all three. A second option generates a graph showing the change in numbers of tasks and principal investigators from FY2004 to FY2015. Maps and graphs can be viewed via Flash or downloaded as PDF files.

Several Ways to Search

There are many reasons a person might be interested in Task Book records. A scientist may be looking for someone working on a similar topic, or a member of Congress may want to know about projects funded in their district. The Task Book provides several ways to access its records and find the specific information that a user needs.

Task Book Basic Search: Basic Search provides a limited set of search options, such as principal investigator (PI) name, key words, project title, NASA funding source, fiscal year, and responsible NASA center. Users can also search for projects that address specific Human Research Roadmap Risks and Gaps (*http://humanresearchroadmap.nasa.gov*). These are areas that the Human System Risk Board has identified as being key to address if human space exploration is to be successful. For Space Biology projects, users have the ability to search by model organisms used and Space Biology research areas.

Task Book Advanced Search: Advanced Search expands the search options to other data points, such as institution, state, Congressional district, whether a project is flight- or ground-based, and flight mission.

Bibliography Search: Publications from projects funded in FY2004 through the present can be searched using the Bibliography Search module. Search options include names of authors and investigators; type, title, or year of publication; and NASA program.

Task Book Archives: The archives cover projects funded in FY1995 through FY2003 and include research supported by NASA's Human System Research & Technology Program (2003) and Office of Biological and Physical Research (1995–2002). Data include project descriptions, annual research results, and publications resulting from the research. Maps and metrics for this time period can also be accessed.

Downloading Data

Once Task Book users have located the information requested, they will find options for downloading their results. The Basic and Advanced Search features, for instance, provide a list of all projects that fit the parameters of the search. The entire list can be downloaded into an Excel file through the "Export Result Set" button. Clicking that button brings users to a page that lets them choose which set of parameters to include in the download.

Each entry in the Task Book—which is accessed by clicking on the project's title—is split into several pages organized by fiscal year, representing the ongoing and progressing research reports. The information on each of those pages can be downloaded or printed by clicking on "Download in PDF" in the upper right of the entry.

Task Book at a Glance

82,000+ searches in 2014
1,936 published records
425 FY2014 active projects monitored
392 FY2015 active projects monitored

For more information, contact
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