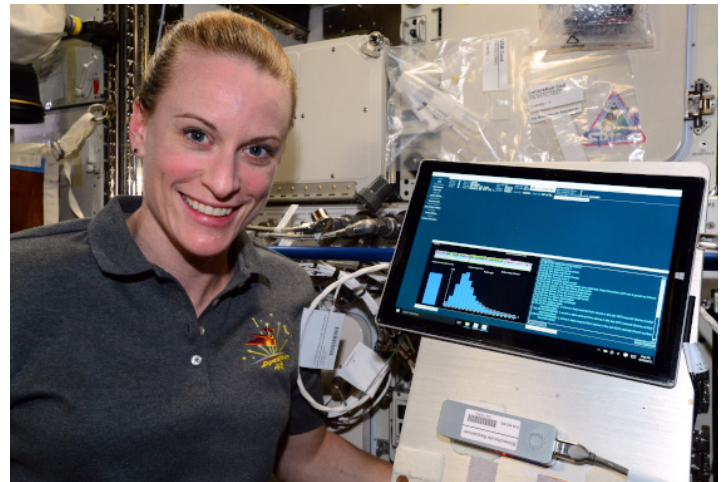


DEVELOPING COMMERCIAL SPACE RESEARCH CAPABILITIES

A SPACE FIELD OF DREAMS

Conducting experiments in the extreme conditions of space enables researchers to study biological and physical phenomenon in ways not possible on Earth — expanding scientific knowledge for the benefit of all.

This research has contributed to many advancements on Earth: from medical treatments to greener combustion engines, new technologies to consumer products — and more. And it's also led to commercial patents and spin-off companies that have impacted our everyday lives.



GROWING RESEARCH DEMAND

NASA aims to be one of many customers in the emerging commercial space economy.

With the International Space Station slated for decommissioning in 2030, the need for new commercial space labs will be critical for those seeking to pioneer scientific discovery using the unique conditions of space, including:

- NASA
- Government agencies
- Colleges and universities
- International partners
- Public and private companies

NASA'S BIOLOGICAL AND PHYSICAL SCIENCES

NASA's Biological and Physical Sciences Division's (BPS) mission is to lead the world in fundamental space-based research, pioneer transformational discoveries, enable sustained human space exploration, and improve life on Earth and in space.

BPS's research priorities are guided by Decadal Surveys issued by the National Academies of Sciences, Engineering, and Medicine. The 2023-2032 Decadal for Biological and Physical Sciences Research in Space will be delivered in the summer of 2023, which will inform the division's priorities for the decade ahead.

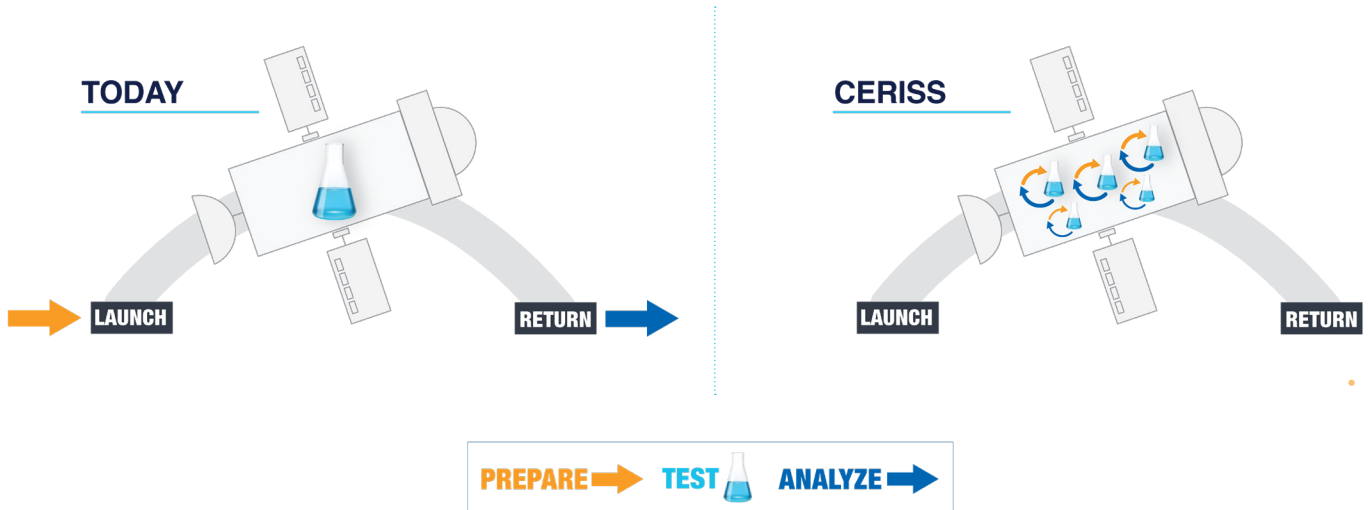
Commercial companies will play a vital role in developing the capabilities required to support the Decadal recommendations.

INCREASING RESEARCH PRODUCTIVITY

It can take 6-12 months for researchers to receive samples, typically a single or limited number of experiments, from the space station.

With NASA's Commercially Enabled Rapid Space Science (CERISS) initiative, scientist astronauts would be able to conduct in situ sample preparation and analysis, enabling them to refine their experiments and gather more data in real-time.

This would dramatically accelerate the pace of research by 10- to 100-fold.



COMMERCIAL OPPORTUNITIES

The CERISS initiative plan currently includes:

Near-term activities:

- Research solicitations to evaluate in-situ sample and experiment preparation capabilities via suborbital flights in collaboration with NASA's Flight Opportunities Program
- Reviewing Requests for Information from commercial companies and the research community to determine capabilities needed and prioritize based on science community input
- Host Industry Day in partnership with NASA's Commercial LEO Development Program to include one-on-one meetings with commercial space companies

Long-range goals:

- Emulate ground-based laboratories in low-Earth orbit (LEO) for end-to-end research
- Conduct Scientist Astronaut Missions (SAMs) on the space station and Commercial LEO Destinations (CLDs)
- Develop automated hardware for experiments beyond LEO (e.g., lunar surface)



FOR MORE INFORMATION:



science.nasa.gov/biological-physical/commercial



twitter.com/NASASpaceSci



CERISS@mail.nasa.gov

