

# Cleared to launch? Ethical guidelines needed for human research in commercial spaceflight

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The commercial spaceflight industry is expanding opportunities for scientific research in space, but the industry needs clear ethical guidelines before human research is ready for liftoff.

In a new policy paper published in *Science*, a global, multidisciplinary team of bioethicists, [health policy](#) experts, [space](#) health researchers, commercial spaceflight professionals and government regulators outlines potential ethical concerns facing the future of commercial space research and provides guiding principles on how to make research increasingly safe and inclusive.

The paper is the result of a workshop held at the Banbury Center of Cold Spring Harbor Laboratory in consultation with researchers from the Center for Medical Ethics and Health Policy at Baylor.

"There are many government-sponsored research missions in space, through NASA and other space agencies around the world, that operate under clear ethical research guidelines. However, few guidelines and [best practices](#) exist for conducting responsible research in the [commercial sector](#)," said Dr. Vasiliki Rahimzadeh, first author of the paper and assistant professor at the Center for Medical Ethics and Health Policy. "Now is the time to develop that ethical framework, and it must be a multidisciplinary effort across the private and public sectors."

In the paper, the team proposes ethical guidelines for commercial space research based on four principles: social responsibility of research participants, scientific excellence in gathering [research data](#), proportionality in balancing risks of spaceflight, and global stewardship in diverse participation.

The authors also outline the need for adapting existing research practices and policies to commercial space flight, including informed consent, data protection and steps to minimize health risks to participants.

"What we learn in space health research is incredibly important not only for future spaceflight but also for informing [health issues](#) on Earth," said Dr. Amy McGuire, corresponding author of the paper and Leon

Jaworski Professor of Biomedical Ethics and director of the Center for Medical Ethics and Health Policy at Baylor. "There is potential for great societal benefit from this research, but we must conduct research in a way that is socially and ethically responsible."

"As we envision a future with more frequent space travel and more commercial spaceflight participants, we need to plan ahead and make [scientific research](#) in space as safe and as productive as possible for as many people as possible," said Dr. Jennifer Fogarty, co-author of the paper, chief scientific officer of TRISH and assistant professor in the Center for Space Medicine at Baylor.

"We are fortunate at Baylor to have the strengths of the Center for Medical Ethics and Health Policy, the Center for Space Medicine and TRISH in one place where we can collaborate, lead these conversations on astroethics and help shape and impact the next frontier of health care."

**More information:** Vasiliki Rahimzadeh et al, Ethically cleared to launch?, *Science* (2023). [DOI: 10.1126/science.adh9028](https://doi.org/10.1126/science.adh9028).  
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