



Axiom Space reveals robust microgravity research portfolio for first-ever private mission to visit International Space Station

- The crew activities of Axiom Mission 1 (Ax-1) will focus on science, education, and outreach, conducting approximately 25 experiments while onboard the ISS
- Critical data from studies in human research, life and physical sciences, technology demonstrations, and Earth observation will expand the applicability of microgravity research to new sectors
- The crew has submitted over 100 hours of human-tended research to conduct during their stay on station.

HOUSTON, 17 November 2021 – Axiom Space, a leader in human spaceflight and human-rated space infrastructure, announced today the research underpinning its historic Ax-1 mission targeted for launch to the International Space Station in February 2022. On the first fully private mission to ever visit the ISS, the multinational crew of four private astronauts with Axiom’s Michael López-Alegría as commander will pioneer a new phase of microgravity utilization amongst non-government entities – laying the groundwork for a full realization of low-Earth orbit’s possibilities and bringing critical findings back down to Earth.

“Humanity has only scratched the surface of low-Earth orbit’s potential for breakthrough innovation and Axiom was founded to push that envelope – first with private astronaut missions to ISS, followed by the launch and operation of the world’s first commercial space station, and eventually the creation of a rotating city in space and scaled human presence in orbit,” said Michael Suffredini, President and CEO of Axiom Space. “We applaud the Ax-1 crew’s commitment to advancing scientific inquiry and kicking off this civilizational leap. We’re confident this mission will become not just a monumental moment in space travel, but the true beginning of making space’s potential for meaningful discovery available to private citizens and organizations for the first time.”

Ax-1 Mission Research

Larry Connor, Ax-1 mission pilot, entrepreneur, and non-profit activist investor, in collaboration with Mayo Clinic and Cleveland Clinic:

Connor’s research projects are the result of long-time partnerships with Mayo Clinic and Cleveland Clinic. The Ohio native has helped fund groundbreaking research at both institutions for much of the last decade.

Connor’s experiments on behalf of Mayo Clinic would provide data on space travel’s impact on senescent cells and heart health. Connor is expected to be in charge of maintaining senescent cells – cells that have stopped dividing – at the ISS. These cells are linked to multiple age-related diseases.

“Ninety-five percent of what we’re trying to do is to benefit people on Earth,” said James Kirkland, M.D., Ph.D., director of the Robert and Arlene Kogod Center on Aging at Mayo Clinic. “I work in geriatrics. I never thought I’d be working with people headed to space; yet here we are.”

Connor's ground research with Cleveland Clinic consists of pre- and post-mission high-resolution MRIs to study the effects of the spaceflight environment on spinal and brain tissue.

"This is a ground-level attempt to learn what kinds of effects space travel will have on civilians across a spectrum of ages," said Thomas E. Mroz, MD, the Director of the Center for Spine Health and Director of Spine Research at Cleveland Clinic. "There's so much to learn. How long can people stay in space? Or what do they need based on their health, etc."

Mark Pathy, Ax-1 mission specialist, on behalf of The Montreal Children's Hospital, Canadian Research Universities and The Royal Canadian Geographical Society:

Under the theme "Caring for People and the Planet," Mark Pathy is expected to take part in scientific research projects in partnership with six Canadian universities and their investigators, as well as proof-of-concepts with two tech startups including the world's first in-space demonstration of two-way holoportation – a mixed reality app for special lenses that receives two-way 3D projections as a hologram to communicate between users remotely. He plans to conduct Earth observation activities in partnership with the Royal Canadian Geographical Society and Western University.

A number of research projects supported by Pathy are led by the clinician-researchers at The Montreal Children's Hospital and Child Health Research at the Research Institute of the McGill University Health Centre, including research that aims to help unravel the mysteries surrounding chronic pain and sleep disturbances during space travel, an environment characterized by microgravity, exposure to radiation, and isolation.

"I thank Mark Pathy for using the Ax-1 mission to champion the transformational role of philanthropy and research. The Montreal Children's Foundation will benefit from Mark's efforts to help create brighter futures for sick newborns, children, teens, and pregnant women in Montreal and around the world," said Renée Vézina, President of The Montreal Children's Hospital Foundation.

Pathy is expected to take part in additional research projects with other universities across Canada, including research led by Université de Montréal on Spaceflight-Associated Neuro-Ocular Syndrome (SANS), which manifests through changes in visual acuity experienced by many astronauts on long-duration space flights and is considered a risk for deep space exploration. Additional research projects are conducted in partnership with researchers at UBC, Ontario Tech, Simon Fraser University, and University of Calgary, which were selected following consultations facilitated by the Canadian Space Agency with the space research community.

In addition to human research, Pathy plans to lead Earth observation activities which will contribute to further analysis of the impact of climate change, urbanization, and other factors on the ecology and human habitation of North America. This is led by Western University as well as The Royal Canadian Geographical Society (RCGS). He is taking part in a program by RCGS that is intended to engage national and international audiences in addressing the environmental health and sustainability of the Great Lakes and their ecosystem,

promoting conservation, restoration, protection, and reconciliation with the water, the land, and the Indigenous peoples of the watershed. Pathy has also integrated additional educational initiatives into his Ax-1 activities, providing STEM curriculum to more than a dozen high schools across Canada.

“I am extremely proud of our partnership with Mark, and also delighted to welcome him in the Society’s College of Fellows,” said John Geiger, CEO of the Royal Canadian Geographical Society. “The unique perspectives Mark will be contributing from space will help build a lasting legacy of learning tied to the protection and conservation of our Canadian ecosystem – long after his mission is complete,” he added.

Eytan Stibbe, Ax-1 mission specialist, social impact investor, and Israeli philanthropist, on behalf of the Ramon Foundation and in collaboration with the Israel Space Agency in the Israeli Ministry of Innovation, Science, and Technology:

Stibbe plans to take part in Ax-1 on behalf of the Ramon Foundation and in collaboration with the Israel Space Agency in the Israeli Ministry of Innovation, Science, and Technology. His mission is named "Rakia," after the dome (atmosphere) created by God on the second day after the firmament, which protects life on Earth. During his mission, he will facilitate scientific experiments and will conduct educational and artistic activities to connect the younger generation in Israel and around the globe on the values of peace, innovation, and social responsibility. For the first time, an astronaut will represent Israelis on the International Space Station in Hebrew. The "Rakia" mission marks another milestone in the participation of Israel in human space exploration.

“The ‘Rakia’ mission is a unique opportunity for Israeli entrepreneurs and researchers to advance innovative ideas and will provide a rare platform for them to test their enterprises in a unique study environment, thereby contributing to the international and Israeli research ecosystem,” said Inbal Kreiss, Chairwomen of the Scientific and Technological Committee and Head of Innovation of Systems Missiles and Space Group at Israel Aerospace Industries. “The mission gives expression to international collaborations between the world’s most prominent academic and research institutions, start-ups and tech companies, medical institutions, and more.”

“A groundbreaking number of experiments were chosen by a scientific and technological committee and integrated with NASA. The experiments are innovative and trailblazing, arising from diverse disciplines – astrophysics, agriculture, optics, communication, biology, healthcare, neurology, and ophthalmology – and were chosen based on their potential impact on research and innovative approach. They are expected to lead to technological, scientific, and medical breakthroughs that will impact the quality of human life on Earth and the future of humanity's long-term missions beyond Earth.”

About Axiom Space

Axiom Space is guided by the vision of a thriving home in space that benefits every human, everywhere. The leading provider of human spaceflight services and developer of human-rated space infrastructure, Axiom operates end-to-end missions to the International Space Station today while privately developing its successor –

a permanent commercial destination in Earth's orbit that will sustain human growth off the planet and bring untold benefits back home. More information about Axiom can be found at www.axiomspace.com.

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