

[Press release: New crew and UK experiment head to the International Space Station](#)

The crew includes two new astronauts, [Anne McClain](#) (USA), who studied at the University of Bath and the University of Bristol, and [David Saint-Jacques](#) (Canada), who studied at Cambridge University. They join veteran cosmonaut [Oleg Kononenko](#) in blasting off to space on a Russian Soyuz crew ship from the Baikonur Cosmodrome in Kazakhstan at 11.31am (GMT) on 3 December.

Their six-and-a-half-month mission involves the first launch of a Soyuz rocket since the emergency landing of a capsule just after launch on 11 October 2018.

The following day (Tuesday 4 December) at 6.38pm GMT, SpaceX will launch its Dragon cargo craft from the Kennedy Space Center at Cape Canaveral on a Falcon 9 rocket. On board will be the first UK-led experiment to head to the ISS, which uses worms to look at muscle loss in space and could lead to new treatments for muscular conditions for people on Earth.

The team of scientists from Exeter, Nottingham and Lancaster universities involved in this project hope to discover more about muscle loss in space, which in turn could lead to developing effective therapies and new treatments for muscular dystrophies. The research could also help boost our understanding of ageing muscle loss and even help improve treatments for diabetes.

Libby Jackson, Human Spaceflight and Microgravity Programme Manager at the UK Space Agency, said:

The launch of the Soyuz means crews will continue to work on the unique science taking place on the ISS, which recently celebrated its 20th anniversary. It is also exciting to see the first of many UK-led experiments heading to the space station. I look forward to seeing the results which will benefit our understanding of muscle loss and help to improve life on Earth.

Spaceflight is an extreme environment that causes many negative health changes to the body and astronauts can lose up to 40 per cent of their muscle after 6 months in space. These changes are regarded as an excellent model for the ageing process in the body, and scientists are able to use the knowledge gained from studying changes in astronauts to better understand the ageing human body.

The University of Nottingham's Professor of Space Biology, Nate Szewczyk, who is at Cape Canaveral for the launch, said:

We are hugely excited to be coordinating the first UK-led experiment on the International Space Station.

The Molecular Muscle Experiment is the first experiment to try to establish the precise molecular causes of neuromuscular decline in space. We will be using a combination of gene manipulations and drugs to pinpoint these causes.

This work is part of a broader investment in space by both the UK government and the University of Nottingham and could lead to real-life improvements to human health, both in space and on Earth.

The microscopic worms being used in the experiment, known as *C. elegans*, share many of the essential biological characteristics as humans and are affected by biological changes in space, including alterations to muscle and the ability to use energy.

Melanie Welham, Executive Chair of Biotechnology and Biological Sciences Research Council, BBSRC, is also enthusiastic about the mission, said:

We are all very excited to be supporting the innovative research that forms the first UK experiment to take place on the International Space Station.

Sending worms into space sounds wonderfully futuristic but this is real research that could help provide new solutions to health problems being faced here on earth. We will all be watching the launch with excitement and wish the team every success with the experiment.

The Molecular Muscle Experiment is the first UK-led experiment to take place on the International Space Station. UK scientists are able to carry out this research thanks to the UK Space Agency's subscriptions to the European Space Agency's exploration programme, which contributes to the costs of the International Space Station, which the UK joined in 2012.

The project is supported by the UK Space Agency, European Space Agency, UKRI, and Arthritis Research UK and the launch is currently scheduled to take place between November 2018 and February 2019.

A year since the launch of the government's modern Industrial Strategy, the UK space sector is also set to benefit from the development of the £99m National Satellite Test Facility at Harwell and the proposed commercial spaceport in Sutherland, Scotland.

Both launches will be streamed live at <https://www.nasa.gov/nasalive>