The sky is *not* the limit for UMES researchers

UMES physics professor **Kausik Das** spent a week with the National Research Council of Canada in mid-October participating in suborbital flights to conduct experiments under zero-gravity conditions, including one developed by four University of Maryland Eastern Shore students.

Das worked alongside and observed astronauts and scientists who were testing potential modifications to body-sensors in space suits for the International Space Station.

To simulate outer space, Das flew aboard a custom-built Falcon 20 aircraft for a roller coaster-like ride – known as a "parabolic" flight, which he described as "an 'out-of-the-world' experience Literally!"

Das has been collaborating with space agencies since 2001, when he was a post-doctoral researcher at the University of California Santa Barbara and participated in a NASA-funded project on the behavior of fluids in reduced gravity.

Later, working at the University of Toronto as a research fellow and physics lecturer, he was involved in Canadian Space Agency research of "g-jitter" – science shorthand for time-dependent variations of the body force in orientation and magnitude in low-gravity environments.

"For this (October 2018) mission, one of my collaborators from the Massachusetts Institute of Technology and I proposed a zero-gravity experimental study through the (citizen-science astronautics) program known as Project PoSSUM," said Das, who joined the UMES faculty in 2014.

Guiding current UMES undergraduates, he said, "we built a payload to test our solid-body rotation experiment in zero-gravity."

Nathan J. Bane, Justin E. Derickson, Ayobami O. Ogunmolasuyi and Jesudara Omidokun built "the whole experimental payload … from scratch. They designed it and 3D printed the parts, designed their own printed circuit board (and) their own circuit, wrote a customized code to run it, assembled it, tested it and trouble-shot it."

"The goal was designing an experiment that could be conducted in a zero-gravity environment to exhibit and measure the rotational behavior of

DAS / continued on page 2