Manchester scientists boost NASA's missions to Mars

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Computer Scientists from The University of Manchester have boosted NASA space missions by pioneering a global project to develop programs that efficiently test and control NASA spacecraft.

The ground-breaking techniques have been used on two operational Martian Rovers and LADEE - a lunar orbiter which was recently sent to the surface of the moon.

A key element of the success of the Manchester team, led by Dr Giles Reger, Professor Howard Barringer and Dr David Rydeheard, is the project work of Helena Cuenca, a Columbian MSc student, who developed the programs and achieved a Distinction Award for her work. The Manchester team worked with scientists at NASA's Jet Propulsion Laboratory on the mathematical foundations of the software.

These new techniques, to monitor computer programs while they run, are part of an emerging area of research. Dr David Rydeheard and his team are the only group in the UK, and one of only a handful in Europe, carrying out this work. The quality of their research has been internationally recognised, when The University of Manchester team won a global competition in Toronto in September 2014, after successfully overcoming challenges from institutions in Germany, France, Switzerland, Canada and the US.

Dr David Rydeheard said: "We have a proud history at the University of Manchester of talented students being able to lead research and have the

freedom to develop their work to make these types of pioneering discoveries. The fact that Giles Reger, a former PhD student, and Helena Cuenca, an MSc student, led this work is testament to this proud tradition.

"We are delighted to be part of a team including scientists at NASA and we are working with NASA and other agencies to continue the work in this field."

Provided by University of Manchester