What is the universe made of? Which is the most abundant element in our universe? Could forms of matter different from the ones on earth exist in space? Those and many other questions can be answered by the Alpha Magnetic Spectrometer (AMS-02) on the International Space Station studying cosmic rays. Cosmic rays are particles accelerated in space at almost the speed of light to collect information about regions of the universe that would be impossible to reach with the current technology. AMS-02 is measuring 50 million particles everyday. The information about each particle is sent in real time from the Space Station to the AMS control room located at the European Organization for Nuclear Research (CERN) where physicists from all around the world analyze the data. So far many interesting results have been collected and a lot is still expected to come.

Veronica Bindi received her PhD from the University of Bologna in Italy. Since 2002, she has been part of the team at CERN that led to the construction, integration and test of the AMS-02 detector installed on the International Space Station on May 2011. An Assistant Professor at the Physics and Astronomy Department of the University of Hawaii at Manoa since 2012, she teaches General Physics 1 (calculus based) and heads a research group composed of postdocs, graduate and undergraduate students focused on AMS. She is a Technology, Entertainment and Design (TED) educator and is involved in many outreach activities to involve more students, particularly minorities and women, in STEM fields.