Astronauts spend days, sometimes weeks and months, in space. They are provided with a habitat, with food and other resources and have been trained for all potential issues, malfunctions and off-nominal situations. But what happens if an astronaut gets sick or is severely injured? Most likely, a physician will not be on board and the return to earth may not be possible or will be delayed. How are the astronauts prepared for medical emergencies? What medical diagnostic infrastructure is available and what therapy options exist in space? Can potential medical issues be excluded pre-flight and how are astronauts medically selected and kept fit and healthy during their career? Can we translate knowledge and experience from aviation medicine to space medicine?

Space Medicine is a very specific subspecialty of medicine since it usually deals with very healthy individuals, has to consider bridging distances and remote operations and has to take effects of weightlessness and harsh environmental conditions into account.

This presentation will explore the medical services provided to European astronauts and examine the challenges that come out of this, the training of astronauts and the medical health care providers. It will also conclude with a view of future space medicine on exploration class missions.

Volker Damann started working as a space flight surgeon at the German Aerospace Research Center (DLR) in 1989, where he supported 8 Shuttle and 2 Soyuz/MIR missions in the function of a crew surgeon. In 1995 he became the Lead Flight Surgeon, and in 1998 he became the Head of the Crew Medical Support Office at the European Astronaut Centre (EAC) of the European Space Agency (ESA) in Cologne, Germany.

In 1996 he became a member of the Aerospace Medical Association (AsMA), the Space Medicine Association, and the Society of NASA Flight Surgeons. He also served the Space Medicine Branch/Association as a member in the early 2000s and as its President for the term of 2011-2012. He became an AsMA Fellow in 2014 as well as a member of the AsMA Executive Committee and Council. He was the recipient of the Won Chuel Kay Award in 2012 and under his leadership ESA has presented a dedicated panel about European operational and scientific elements of space medicine at the annual AsMA conference for the last 6 years.

He also led psychological and medical tests and examinations for a major ESA astronaut selection campaign in 2008-2009.

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17:30 - Refreshments
18:00 - Lecture starts