

# Institute of Aerospace Medicine

## Institute Seminar, January 14, 2020, *Abstract*

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### **From Cruise Ship to Spaceship - How Dangerous are Norovirus Infections and How to Study and Combat This Challenging Pathogen?**

Norovirus are the most common cause of non-bacterial gastroenteritis and infect Millions of people worldwide every year. In Germany it is one of the most notified infectious diseases reported to the health authorities. Recent reports reveal a yet underestimated host range including livestock, pets, wild and marine mammals as well as bats. Despite an increasing diversity and a significant proportion of unaccounted for infections there is no conclusive evidence that noroviruses can jump the species barrier. The lack of efficient cell culture and small animal models still pose a significant hurdle in studying the biology and transmission of this challenging pathogen. Factors that contribute to host restriction are manifold and include cell surface carbohydrates and proteins as well as immunologic barriers and the hosts microbiome. Our lab explores new cell culture and animal models to study norovirus infections and the molecular mechanisms of norovirus entry.

I would present our work on the following topics:

- Protein and carbohydrate factors that contribute to norovirus host restriction
- New cell culture and animal models
- Novel antivirals and their use in containing norovirus infections